# The Iron A

READING MATTER, PAGE 30

A Review of the Hardware, Iron and Metal Trades.

ADVERTISEMENTS

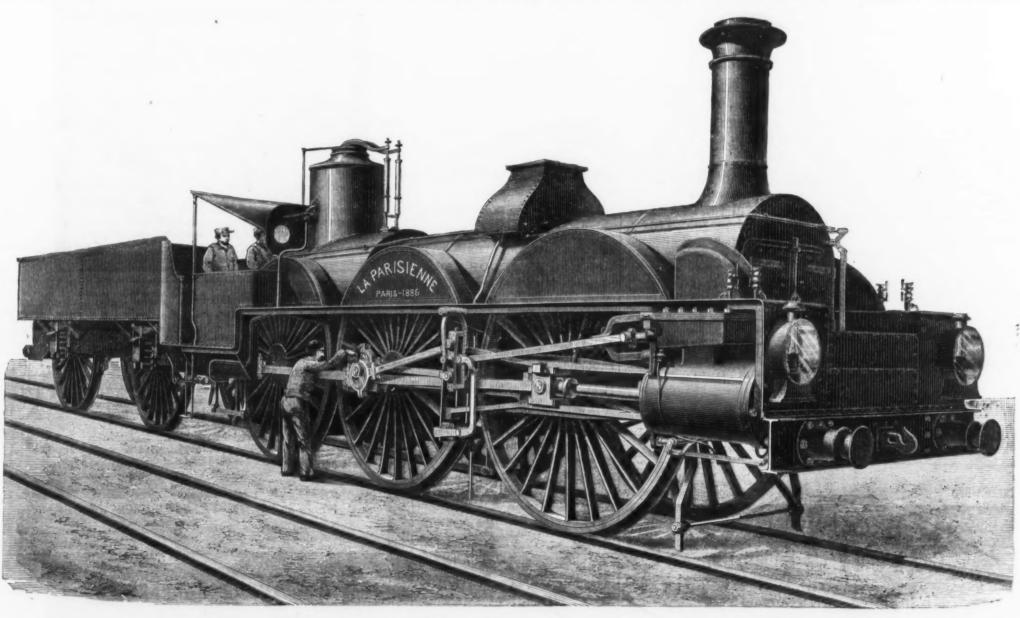
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The Estrade High-Speed Locomotive.

In an article on "Novolties in Locomotive Practice," published in our issue of May 27, 1886, we referred among other matters to a neugrine designed by Mr. Estrade, a graduate of 1 Ecole Polytechnicating and which, as stated at the time, was at each end of the coach, and committee on the Source of Conservatoric designs covered a complete system of rolling stock for a passenger train, and were exhibited in model form at the Conservatoric des Arts et Metiers, at Paris. The locomotive, we are now informed, has a tate at the establishment of Mm. J. Boulet & Co., of Paris, and were exhibited in model form at the Conservatoric des Arts et Metiers, at Paris. The locomotive, we are now informed, has a tate at nearly date will be watched with the particular service has determined a current of the dimensions and in the circumstances reported, and which were actually destroyed; taking three examples, a wheel at Konigabituse, a whoel at Konigabituse, a whoel



M ESTRADE'S HIGH-SPEED LOCOMOTIVE LA PARISIENNE.-DIAMETER OF DRIVERS, 84 FEET.

wheels 8% reet in diameter. His locomotive is of the outside cylinder type, with slide valve on the top of cylinder, and all the gear carried outside, according to the general plan on the Continent. The six wheels of 8¼-foot diameter are coupled and placed as close together as possible, as will be seen from the following table of dimensions, which will be studied with curiosity, if not

fest...

Cylinders stroke, inches...

from axis to axis, feet...

Grate surface, square feet...

Heating surface, square feet...

Capacity of boiler, cubic feet...

Weight of engine, empty, tons...

Weight of engine, loaded, tons...

capable of maintaining speeds of 72 to 78 miles an hour. The tender has wheels 84 feet in diameter, and is arranged to carry as much water and coal as possible, but otherwise presents no features of novelty. The coaches are peculiar in that they are carried inside iron girders, while the wheels run under the center of the longitudinal coaches are usually made consideration.

Consideration of the static weight at once leads to that of the preponderating centrifugal to the content of the subject in a separate essay, premising that such wheels are usually made considerations. seats. Two axles, 16 feet apart, support, through elliptic springs mounted upon the oil-boxes, these longitudinal girders, which have ends curving toward the ground. Each girder carries three other elliptic springs, from which is suspended, by means of iron rods, the lower frame on which the

of one wheel was 42 m. (137.8 feet), and or the others none exceeded 33 m. (108.27 force from their circumference to other feet). In only a few instances were the conditions abnormal. He believes, therefore, that a special danger exists in the ordinary employment of rolling-mill engine the latter in the nature of shocks; when iron fly-wheels. No accident was attributed to shocks, to which they are necessarily substance, the latter in the nature of shocks; when iron enters the rolls it is difficult to measure, but it may be sometimes very dangerous. Deshocks, to which they are necessarily subject when at work, and the significance of Accidents fatal to life were few, but build-ings and machinery had been seriously damaged or destroyed. He recommends proprietors of works to pay special attention to every detail of these fly-wheels. The disruptive force active in a revolving fly-wheel results from: 1. The static weight; 2, the forces acting in a plane perpendicular to a section of the rim in the case of belt, enable him to calculate the effect of sudden rope or toothed-gear transmission.

The Iron Age in which we described the engine, we reprint the following particulars: Convinced of the value of large wheels, M. Estrade fits not only his locomotive, but also the tender and coaches, with have been scheduled. Grouping 41 accidents, he finds the circumferential velocity is of the outside cylinder type, with slide value of the outside cylinder type, with slide value of the author for examination, are the data and probabilities point to the conclusion that only a small proportion of the actual casualties the dimensions of the arms and the rim would be objectionable. The work at the dimensions of the arms and the rim would be objectionable. The work at the dimensions of the arms with the rims would be objectionable. The work at the dimensions of the arms with the rims would be objectionable. The work at the dimensions of the arms with the rims would be objectionable. The work at the dimensions of the arms with the rims would be objectionable. The work at the dimensions of the arms with the rims would be objectionable. The work at the dimensions of the arms with the rims would be objectionable. The work at the dimensions of the arms with the rims would be objectionable. The work at the dimensions of the arms with the rims would be objectionable. The work at the dimensions of the arms with the rims would be objectionable. The work at the dimensions of the arms with the rims would be objectionable. The work at the dimensions of the arms with the rims would be objectionable. The work at the dimensions of the arms with the rims would be objectionable. The work at the dimensions of the arms with the rims would be objectionable. The work at the dimensions of the arms with the rims would be objectionable. The work at the dimensions of the arms with the rims would be objectionable. The work at the dimensions of the arms with the rims would be objectionable. The work at the dimensions of the arms with the rims would be objectionable. The work at the dimensions of the arms with the rims would be objectionable. it may be sometimes very dangerous. De-formation of the rim occurs when the angufracture in the arms and in the hub does not lar motion is retarded; the greatest centrif-appear to have attracted sufficient attention. arms with the rim. The greatest stress on the arms is at the hub, but they are usually tapered, preserving at least uniformity of strength. A dovetailed wedge-shaped junction of the arm and rim tends to turn about one of its angles, and in course of time to work loose and strain the cheeks. Any form of attachment is more or less open to the same objection, but the strength of the rim is not much reduced in consequence. The

ugal force developed in the rim and in vac-arms. Diagrams illustrate the composition of the elementary forces, and a series of the conditions in which they work are much more favorable to resist shocks, and that equations results in fundamental formule, which the author applies to a numerical estimate of the stresses which would fracture struction and fitting, which necessitate mate of the stresses which would fracture struction and fitting, which necessitate \*

\*By - Köchy, from "Foreign Abstracts" of Institution of Civil Engineers.

\*By - Köchy, from "Foreign Abstracts" of Institution of Civil Engineers.

certain whether it is intact. A competent tals are apt to be formed. The experiment referred to was made in the following manner of the following mann ance of all forms and modes of construction which might create strains in those parts which are loaded when at work, whether the wheels are built up or cast in a single piece. Many fractures may be attributed to the employment of solid hubs, which are subject to initial strain from the casting. Official and managing engineers are expected to avail themselves of the calculations and information submitted the critical examination of wheels at work, not only as a matter of interest, but as tending to avoid accidents which otherwise, he anticipates, might sooner or later occur.

At a special meeting of the Boston Society of Civil Engineers Mr. Fred. Brooks, a member, presented a paper on the com-parative size of metric and old units, with reference to convenience. This is published in pamphlet form by the Association of Engineering Societies, together with the report of the Committee on Weights and Measures of the Boston Society.

was lined with sand; into this a mold that was ined with sand; into this a moid that would produce a spherical casting was placed. Between the mold and the sand a quantity of charcoal was packed. The mold then had a quantity of malleable iron made by the Bessemer process poured into it, and the whole was covered up for 10 days. The metal had a heavy dose of phosphorus, 1/4 to 1/4 per cent. but no carbon, At the end of the 10 days the globular mass was dug out, A smart tap with a 2-pound hammer had the effect of sending off a shower of crystals, and there apeared to be no cohesion among the particles of the mass. On hamering one of the crystals on an anvil it could be flattened down, thus showing that each individual crystal was a particle of malleable iron, although the cohesion of the crystals to each other was so slight. Sir Henry thought this experiment worth detailing, as it tended to show the great importance of the time allowed for cooling in iron and steel.

The Swedish Government, following the In his presidential address before the example of the German Commercial Geog-ninth annual convention of the Western Gas raphy Society, has sent a frigate, the Vana-Association Mr. James Somerville, of Indis, to Morocco. The vessel carries, free of dianapolis, Ind., suggested that every gas charge, samples of the manufactures of company whose managers find difficulty in disposing of their coke at a fair price to market for their goods in the Mediterranean.

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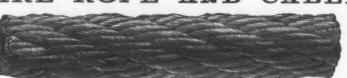
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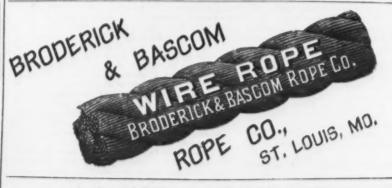
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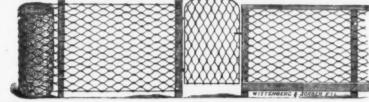
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The Effect of Frost on Different Roadways.

There is scarcely any condition of weather which has a more injurious effect upon our thoroughfares than frost, especially should it chance to be, as it was during last winter, of exceptionally long continuance. Every road-maker, says the Engineer in a recent article on the subject, is aware of the risks he runs, under such circumstances, of finding that all his efforts toward perfecting the condition of his roads have been negatived by such an untoward event, and it seems desirable, at a time when so many arguments are being untoward event, and it seems desirable, at a time when so many arguments are being advanced by the advocates of the several systems which are in use among us, to consider which of them is the least liable to be affected by this dreaded enemy. It is as well to use the words "least liable," because all experience goes to show that there is not one of those systems but what is, under certain conditions, coen to injurious action upon tain conditions, open to injurious action upon it by frost. No one could walk the streets of London, for instance, during the late severe weather without noticing that in some way or another one and all of the street pavings of which this city possesses so many diverse examples had suffered in some degree from its effects. It will be as well to take the cases categorically, and to make reference first to those macadamized roadways which were the first effort of our regenitors toward improving our means of unication.

communication.

Intimately connected with this subject is, of course, that of perfect surface drainage. Frost can have but little effect upon any roadway which, retaining its perfect form, and sound as regards its covering, at once throws off all meisture falling upon it. The basis of its covariant is the last to the throws off all moisture falling upon it. The basis of its operation is thus lost to the frost, and it must prove altogether innocuous. But this is supposing a condition of things which is impossible of realization. No macadamized roadway can, under the exigencies of traffic, be maintained invariably in the state which alone could insure important from the injury under consideraimmunity from the injury under considera-tion. Inequalities must exist in all such road surfaces, affording a lodgment for water in a greater or less degree, and it matters but little what that degree may be. For it is evident from the teaching of all experience that the shallower the water film the more quickly is it acted upon and solidi-fied, while the effect in causing injury to the road surface is fully equal to that which may be due to a greater mass of frozen water. In fact, in the case of macadamized water. In fact, in the case of macadamized roads it may almost be said that the thicker the ice that is formed the less chance there is of the metal being disturbed by traffic while disjointed, so to speak, from the effect of frost. It is therefore often found that roads of this class which are comperatively in a good state of repair suffer equally, if not even in a greater relative degree, than those which have developed more the results. not even in a greater relative degree, than those which have developed more the results of wear and tear. It is on a form of road construction composed of a mass of units liable to disintegration that frost exercises

its most potent effects.

The swelling of the innumerable joints in-separable from Macadam's system quickly forces out of position the metal, however thoroughly it may have been consolidated by steam rolling or by a constant stream of traffic. The binding material itself assumes a condition in which it readily pulverizes to mere dust, and as the result we see the roadway under frost covered with loose metal, and each passing vehicle cutting deeper and deeper into the disturbed mass. Such an effect, it would seem can payer be superded. effect, it would seem, can never be guarded against on macadamized roads. Their construction is of a character which lends itself greatly to aid in the destructive effect of frost. Nor is it alone the center of the roadway—that is, the portion which bears the traffic—that suffers. Injury is particularly liable to occur from the cause named at the liable to occur from the cause named at the edges of the road unless the side drains where they line the metaling make an almost water-tight joint with it. Indeed, it is in such position that frost often exercises its most injurious action. At such points its most injurious action. At such points the metaling is, as a rule, greatly reduced in thickness, and, although it is less exposed to the disrupting effect of traffic, it is more easily permeated by damp from imperfectly cleared side drains, and the thin coat of metal, when that dampness becomes solidified by frost, breaks up almost at once, the débris being thrown into the side drains, causing a further blocking of them and intensifying the means of inthe side drains, causing a further blocking of them and intensifying the means of in-action.

Jury. So serious are the results in such inceed stances that a gentleman well-practicedt: no road construction held that it would Pock, 44 economical to combine the system of as breeching with that of Macadam. He prorgings for lay a width of at least a foot alorgings for sides of his roads with metal; forgings for asphalt or other water proof mound; forgings there arose the difficulty thand; forgings for in a combination of syst-pound; forgings for in a combination of syst-pound; forgings for case being the impossible per pound; forged asphalted line with thigs, 64 cents per pound, Weakness a'gas-check rings, 64 cents would have been s'

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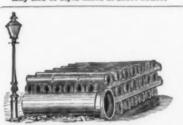
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communication.

Intimately connected with this subject is, of course, that of perfect surface drainage. Frost can have but little effect upon any roadway which, retaining its perfect form, and sound as regards its covering, at once throws off all moisture falling upon it. The basis of its operation is thus lost to the throws off all moisture falling upon it. The basis of its operation is thus lost to the frost, and it must prove altogether innocuous. But this is supposing a condition of things which is impossible of realization. No macadamized roadway can, under the exigencies of traffic, be maintained invariably in the state which alone could insure immunity from the injury under consideration. Inequalities must exist in all such Charcoal Iron, Consellsville Coke,
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Philadelphia Testing Laboratory, the ice that is formed the less chance there is of the metal being disturbed by traffic while disjointed, so to speak, from the effect of frost. It is therefore often found that roads of this class which are comperatively in a good state of repair suffer equally, if not even in a greater relative degree, than those which have developed more the results of wear and tear. It is on a form of road construction composed of a mass of units liable to disintegration that frost exercises its most potent effects.

The swelling of the innumerable joints in-separable from Macadam's system quickly forces out of position the metal, however thoroughly it may have been consolidated by steam rolling or by a constant stream of traffic. The binding material itself assumes a condition in which it readily pulverizes to mere dust, and as the result we see the road-way under frost covered with loose metal, and each passing vehicle cutting deeper and deeper into the disturbed mass. Such an effect, it would seem, can never be guarded against on macadamized roads. Their construction is of a character which lends itself greatly to aid in the destructive effect of froat. Nor is it alone the center of the roadway—that is, the portion which bears the traffic—that suffers. Injury is particularly liable to occur from the cause named at the edges of the road unless the side drains where they line the metaling make an almost water-tight joint with it. Indeed, it is in such position that frost often exercises its most injurious action. At such points its most injurious action. At such points the metaling is, as a rule, greatly reduced in thickness, and, although it is less exposed to the disrupting effect of traffic, it is more easily permeated by damp from imperfectly cleared side drains, and the thin coat of metal, when that dampness becomes solidified by frost, breaks up almost at once, the débris being thrown into the side drains, causing a further blocking the side drains, causing a further blocking of them and intensifying the means of injury. So serious are the results in such in-stances that a gentleman well-practiced in road construction held that it would prove economical to combine the system of asphalting with that of Macadam. He proposed to lay a width of at least a foot sides of his roads with metal Jone both asphalt or other water proof material. But there arose the difficulty that always exists in a combination of systems, that in this case being the impossibility of binding the asphalted line with that of pure macadam work. Weakness at the line of junction would have been sure to show itself, as the degree of expansion and contraction under varying sorts of weather differed, and the plan—effective enough, perhaps, had it stood per se—had to be given up. No amount of per se-had to be given up. No amount of precaution that can be exercised with a due regard to economy can, it appears, suffice to guard against the contingency named, or generally to protect the surface of mac-adamized roads from the injurious effects of frosty weather.

The conditions under which asphalt is employed as a road covering render it much less liable than is macadam to such effects. An asphalt pavement, when perfect, or even comparatively perfect, may be said to be able to resist almost any amount of frost. be able to resist almost any amount of frost. Considerations of the effect of it in rendering the foothold insecure must, of course, be left out of sight in the matter under present discussion. If the pavement be so far in form as to insure a free discharge of moisture into the gullies (there being no side drains to keep clear of water accumulation), asphalt will undoubtedly remain unaffected by weather which would seriously try macadam. But it suffers under one disad-vantage to which the latter system is certainly not exposed. It possesses little or no degree of elasticity. When, therefore, there

is a force operating to disruption, and,

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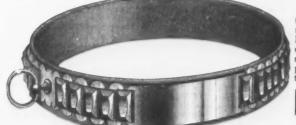
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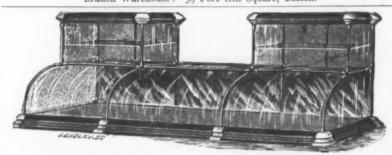
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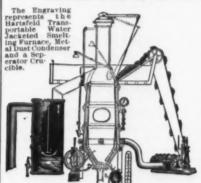
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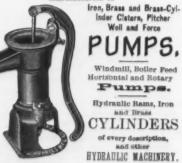






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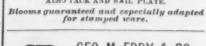
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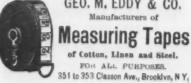


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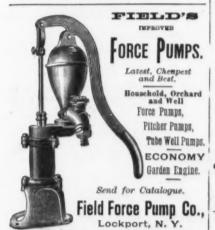


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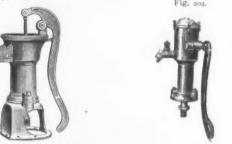


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shown in the illustration, is a new article we are introducing, designed for showerng trees, shrubs, &c., as an insecticide, intended to carry in the hand, with pail on the arm. It will throw a good stream 40 or 50 feet high.

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assuming this to have obtained a fulcrum for this particular phase of the subject is paving much worn by traffic becomes dangerously thin upon its concrete bed, eventually cracks, and then admits water between it and its foundation. Frost then occurring than its foundation. Frost then occurring causes the permeated moisture to swell, and upheaval of the exposed edges follows; further sub-permeation then takes place and the asphalt comes up in large masses. Nothing, it may be conceived, can guard

opposed to its economical employment. Injury to this material is almost unknown during the warm summer months, when it possesses a certain modicum of that elasticity which, as has been said, is wanting to

ticity which, as has been said, is wanting to it under the wider range of conditions.

The question as it has been put is whether it would not be possible by admixture to give it a degree of that quality which, while tending to preserve it during frosty weather, would not adversely affect its traffic-bearing preperties. Is it, it is asked, wise to use an entirely unyielding material to carry road traffic? There is an analogy to a certain extent between an asphalt roadway and the extent between an asphalt roadway and the solid concrete roof coverings used in Eastern countries. The more solid and unyielding the character of these coverings the more certain are they to crack from the contraction and expansion and consequent movement of the beams which support them. This difficulty appears to have been over-come by those dealing with such roofs by filling in the lines of cleavage where they sesses at a higher range, it is to be believed that much of the danger now due to the action of frost upon it when used for road surfaces would be done away with. Whether this is possible to be done without militating against the traffic-bearing qualities of hard asphalt present experience does not prove, but experiment in this direction would not be thrown away.

Wood paving combines in a great degree certain of the peculiarities of both the two systems previously considered. As is mac-adam, so is wood paving an aggregation of units liable to the same disturbing influences, though in lesser degree, while, like asphalt, it has no perfect unition with its foundation, and is therefore similarly liable to the effect of damp getting below it and being acted upon by frost; but it possesses in an eminent degree the quality of elasticity named as being wholly absent in asphalt paving, while the lesser number of joints as compared with macadam enables them to be other hand, the main material employed is essentially porous, and in its untreated condition readily admits of the permeation of damp. Of late years, it may be observed, there has been a tendency to lay such roadways with wood blocks wholly unsubjected to any process of water-proofing. This may be economical in first cost, but it must prove fatal to that quality in the long run. Fre-quenters of Fleet street would have probably observed the results to such a method which negative of such a manifest precaution. neglect this is to co-operate with the frost in neglect this is to co-operate with the frest in performing its destructive work; and no idea of saving in first cost should be allowed to induce neglect of guarding against after injury.

But there is another point of view which

has also lately received strong illustration, from which the effect of frost on wood from which the effect of frost on wood paving may be considered. The elasticity of this system has before been referred to, but it is, as at present treated, limited to the wood portion of it only. The jointr, as now filled in, are eminently inelastic, the asphalt employed being as deficient, of course, in that quality as has been pointed out in relational transfer of the proper being as deficient, of course, in that quality as has been pointed out in relational transfer of the proper being as deficients. The following are the bids on cored shot:

West Point Foundry Association—shot, \$20 and the course had a specific or the proper being a specific part of the proper bearing the part of guine and carriages, \$1050; ammunition wagons, \$600; loading tools, \$100; percussion shells, fuse, carriages, \$1050; ammunition wagons, \$600; loading tools, \$100; percussion shells, fuse, carriages, \$1050; ammunition wagons, \$600; loading tools, \$100; percussion shells, fuse, carriages, \$1050; accessions for wagons, \$600; loading tools, \$100; percussion shells, fuse, carriages, \$100 creosoted or untreated by some other method of water-proofing, must constantly vary, both in shape and size, during changes of weather. filling the joints. Hence it must follow that at certain periods there must be found interatices through which damp may percolate from the surface between the blocks and their bed. The arguments advanced in

action, there is not with asphalt, as there is the question of accurate laying of wood with macadam, a function enabling it for a while to resist that force. Supposing this to be sufficiently intensified, the effect is immediate and the injury widespread. The mediate and the injury widespread. The latter must go on extending so long as the frost continues or preventive measures are delayed, and the result is far more ruinous than in the case of metaled roads. Now it is certain that there do occur repeated instances where frost has obtained the fulcrum referred to. Asphalt paying much worm by treffic becomes dan. the laying of the wooden roadway in that thoroughfare. The blocks were literally almost thrown together, and the result after the late frost should prove a caution for the future against any repetition of such false economy in work of this description. It is not too much to say that the state of the Pall Mall pavement is a disgrace to a city like London. Its center was not many Nothing, it may be conceived, can guard against such contingency if the pavement is once allowed to become so thin as to be liable to crack under weight. Asphalt is particularly free from any such tendency at a moderate degree of temperature; but under a low range of the thermometer it becomes exceedingly brittle, and therefore particularly liable to such an accident. It has been suggested that the very hardness of the asphalt used in street paving is opposed to its economical employment. It consist primarily of blocks through which consist primarily of blocks through which damp cannot penetrate. Secondly, its joints must be accurately laid and of as little width as may be possible consistently with allowas may be possible consistently with allowing some expansion of the blocks without producing a disrupting effect, and, thirdly, if it be possible to do so, these joints should be filled with material of a less rigid character than hard asphalt. Elasticity is a condition to the long life of a railroad track, as well as to that of the rolling stock. Equally desirable is it that the same quality should as far as possible be accurate for ordishould as far as possible be secured for ordinary roadways. There remains but one system of construc-

tion to be dealt with—that of paving formed of stone pitchers. As regards the liability of it to injure by frost, it combines the weaknesses of both macadam and wood paving, traction and expansion and consequent movement of the beams which support them. This difficulty appears to have been overcome by those dealing with such roofs by filling in the lines of cleavage where they have showed themselves by a mixture of tar and tallow. Those lines of cleavage once established rarely diversify themselves, and the elastic character of the filling-in material employed enables them to widen or close up without further injury or without admitting water. It cannot, of course, be said that such a method is applicable to roadways, but it may be admitted that it at least proves the danger of using inelastic material under circumstances which must expose it to disrupting influences. Every roadway is liable to these, and, if a mixture even the smull degree of elasticity it possesses at a higher range, it is to be believed that much of the danger now due to the action of frost upon it when used for road surfaces would be done away with. Whether without the advantages in other respects which are patent in both of those systems. under varying temperatures or climatic conditions. Perhaps to that advantage may be added one other—that of weight as opposing itself to the swelling action of frost; but it must be manifest that it is only when this last is of a very restricted power that such a qualification can be said to possess any ad-

To sum up the result of what has been written, it may be concluded that all the various forms of paving roadways as at present practiced offer themselves with individual peculiarities to the destructive effects of frost. As immunity from percolation between the material and its bed is the chief safeguard from these, the asphalt paving may certainly be placed first in its qualifications for resisting them, though it has been pointed out that this pavement is not free from a particular danger. The three other systems seem to rank pretty proofing character than is possible with the last-named form of work. But then, on the macadam seems to be hopeloss for improvement, it is certain that in that of wood, at all events, more careful laying and the use of some more elastic material for filling in the joints would go a long way toward enabling it to resist the action of our severe winter frosts.

#### Ordnance Supplies.

The following is the bid of the Midvale Steel Co., of Philadelphia, Pa., on steel forgings for the Ordnance Department: 10 were apparent in the case of portions of its roadway laid not long since with uncreosolution wood. Under the influence of the frost the whole roadway in places was upheaved bodily, with what after-results in a financial sense can be easily imagined. In a race plate, 64 cents per pound; forgings for climate such as ours it must without doubt block carrier, 80 cents per pound; forgings be one of the primary considerations in laybe one of the primary considerations in laying down any road paving that it should be able to withstand in the fullest possible bushing ring. 45 cents per pound; forgings for bushing ring. 45 cents per pound; forged manner the effect of our constant rainfall. bar for securing rings, 64 cents per pound, The practice above referred to is in direct and forgings for gas check rings, 64 cents To per pound.

The same company put in the following

(1.45 in.), \$7800; carriages, \$3000; limbers, \$2250; accessions in reserve parts for guns

employed being as deficient, of course, in that quality as has been pointed out in relation to paving wholly composed of it. It is certain that wood blocks, especially if uncreosoted or untreated by some other method of the course of the co \$30 and \$2. Tredegar Co., Richmond—\$60

and \$3.

The bids for supplying the army with a But the movement so caused cannot be followed by the rigid material employed for falling the joints. Hence it must follow that South Boston Iron Works, Boston, Mass., \$3500; Builders' Iron Foundry, Providence, R. I., \$5000.

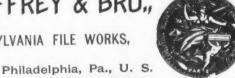
A curious instance of the ambition of new favor of elasticizing—to coin a word—this traders is offered by the following item from material have, therefore, additional strength in this relation. Intimately associated with Co., Limited, is the title of a company



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ONE OF THE VERY BEST TOOLS EVER INVENTED.



The above Cut shows the action or mechanism complete, also an end view of the Ratchet and Pawls, to which we wish particularly to call your attention, as in all ratchet movements, of whatever kind or nature, the RATCHET must be the principal and most mportant part employed.

It combines greater Strength,

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The blade is best cast steel, spring temper, easily sharpened, and is giving universal satisfaction. A few moments' trial will show its merits, and parties once using it are unwilling to do without it. Its sales are fast increasing for export as well as home trade, and it seems destined to take the place of all other Hay Knives.

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We are informed that various parties are infringing upon the widely-known Letters Patent granted originally to George F. Weymouth for an improved Hay knife.

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All manufacturers and dealers are hereby warned of our rights, and the public are cautioned against purchasing any Hay Knives which are not of our genuine manufacture.

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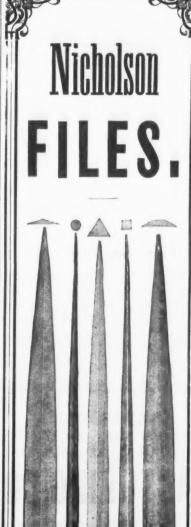
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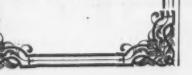


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eel Stencil-Cutting Dies. Soap Moulds and Brass Stamps.

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PATENT SOLID CAST STEEL SOCKET

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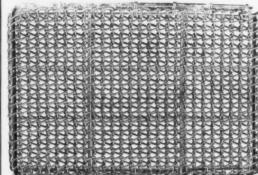
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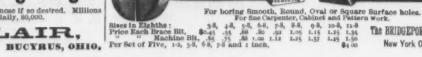
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## English Letter.

(From Our Regular Correspondent.) LONDON, June 7, 1886.

THE OUTLOOK

is reported to have undergone a slight change for the better since the date of my last report. For one thing, bright and hot weather has set in, and that much desired last report. For one thing, bright and hot weather has set in, and that much desired consummation could not fail to have due effect at this period of the year, when some of the crops are in a forward condition and everything needs fine weather. In the agricultural districts I hear of a decided brightening up, with numerous orders for implements, field machinery and general hardware. From the seaside resorts and other holiday places there is also an improved demand, inasmuch as the very late Whitsuntide recess this year will virtually represent the commencement of the regular holiday season. In London the "season" properly so-called is at its hight, and things are moving briskly in all that pertains to or is affected by the crowded fashionable programmes of the time being. All this, however, may be cut short any moment, inasmuch as at the very time I am writing the final stage of the long-winded debate on the home-rule question is being reached, and the fateful division will be taken in the small hours of to-morrow morning. There is every likilihood that the bill will be defeated you, except that I may point out that if we do have a contested election within the next few weeks it will have a bad effect upon all branches of trade. Just before harvest is a busy time for the farmers and all dependbusy time for the farmers and all dependent upon them; yet, if it must be, why then it were better in every sense that it should be done quickly. It would be better still were the fiction styed "Parliament" abolished and the country governed by a chosen few who knew their own minds and had the strength of will to do what they believed into the country of course and the bowle.

the strength of will to do what they believed right, irrespective of caucuses and the howls of a discontented minority.

The stoppage of furnaces in Scotland, to which I alluded in my last, is naturally attracting notice in the trade, but I do not gather that the causes of such stoppages are clearly ascertained. We all know that a certain number of furnaces have been damped down, but we do not know whether they have been so treated from necessity or from expediency. There are rumors affoat the form of the control of the contr from expediency. There are rumors affoat which profess to distinguish the "fine Roman hand" of a certain eminent firm throughout the transaction, and it is said that the bulling of the market is the prime reason of the alteration. Anyhow, as the old Spanish saw has it, "He who lives longest

will see most."

The Rail Association appears to be irrevocably dead, and the outward showing of the moment is that the Germans have the upper hand. It is true that Bolckow, Vaughan & Co. have been successful in tendering for a Scandinavian order, but the Germans vow they will look after the rest of the orders now on the tapis, and they have some smart men in London with that end in view. Bad faith is freely alleged, I understand, against some of the British members of the defunct combination, and the Germans openly boast that they have more money at their backs than the British concerns they are now fighting. Nous vervons. money at their backs than the British concerns they are now fighting. Nous versons. Meantime I hear some curious tidings respecting the prospects of protectionism in Germany. The agriculturists of that Empire allege that they cannot and do not make 1½ % on their capital, whereas the iron and steel men divide all sorts of dividends up to

is without special change no note on the week, almost all branches of the trade being characterized by continued quietude. In a few instances only there is a little more work in hand, but these exceptions simply serve the purpose of proving the rule. At Glasgow matters have been quiet, and not more than an average amount of business has been done, either in warrants or in makers! here the content of the special forward to with great interest, and if it should be carried through without misunderstanding or dispute the result will doubtless be regarded as final, both the parties selected being experts in the two systems."

SCOTCH PIG IRON is a shade steadier on the whole, owing in part to the reduction of the production, and partly by reason of the financial difficulties Glasgow matters have been quiet, and not more than an average amount of business has been done, either in warrants or in makers' brands. The closing price of warrants was 38/7½. Some of the special brands were 6d. \$\frac{1}{2}\$ ton easier on the week. The shipments last week were again below those of the comparative period of last year, and large additions were made to the reserve stocks. The Middlesboro'iron market is quiet, and price of No. 3 ranges from 29/3 to 30/\$\frac{1}{2}\$ ton. Nothing more seems to have been heard of the restriction scheme; consequently, we may assume that it has been quietly dropped. On the West Coast there has been no change of moment in respect of hematite pigs, which remain at about 41/6 Calder. 

formed "to transact business in the United As Mr. Renwick says, this is "carrying Kingdom, Burmah, India or elsewhere, as coals to Newcastle" with a vengeance. In merchants, bankers, traders, commission agents, ship-owners, carriers, &c." It was registered on May 4, 1886, with a capital of £300 in 600 shares of 10/each, with power to increase. From this it might be gathered that capital is about the last thing required for extensive business enterprise. girder works are well supplied with orders, recent testimony, as well as the more convincing test of prices, having been considerably favorable to them. In galvanized iron there is no particular alteration to note, although there seems to be a tendency for the business to run into a limited number of the business to run into a limited number of channels. Shipments are being made direct from Bristol to Australia, an economy of some 10/60 12 ft ton being said to be effected thereby, as compared with shipments from Loudon. Fencing wire is not brisk, and many of the works are poorly engaged at home, although the principal German houses are said to be busy. Ordinary finished iron is unaltered, on the basis of £6. 10/60 £7 for unarked bars, £5. 15/60 £6. 5/ for good second-grade iron, and all sorts of figures for common down to about £4. 5/ for Welsh in India assortments. Beleverything needs fine weather. In the agricultural districts I hear of a decided brightening up, with numerous orders for implements, field machinery and general hardware. From the seaside resorts and other holiday places there is also an improved demand, inasmuch as the very late Whitsuntide recess this year will virtually represent the commencement of the regular holiday season. In London the "season" properly so-called is at its hight, and things are moving briskly in all that pertains to or is affected by the crowded fashionable programmes of the time being. All this, however, may be cut short any moment, inasmuch as at the very time I am writing the final stage of the long-winded debate on the home-rule question is being reached, and the fateful division will be taken in the small hours of to-morrow morning. There is every liklihood that the bill will be defeated by a majority estimated at from 6 to 35, but Mr. Gladstone is an "old Parliamentary hand," and he may have a surprise in store at the last moment in order to save his bill. However, it is of no use speculating upon an event the actual results of which will be known many days before this letter reaches you, except that I may point out that if we do have a contested election within the next few weeks it will have a bad effect upon all f.o.b. Welsh ports, but sawn ends are more money. Steel rails are in a chaotic condition so far as prices are concerned, and there is apparently no certainty that bottom figures have been reached. Bolckow, Yaughan & Co. are understood to have booked a good order for Sweden and Norway, and one or two other contracts have been given out in other directions. The German makers are on the alert, and are in the market with the settled determination to make things uncommonly "hot" in connection with all forthcoming contracts. They are prepared to quote £3. 10/, "or thereabouts," for any order, and are credited with the intention of paying particular attention to work for India.

	No. 1	No. 2.	No. 8.
Cleator	42/3	4:2/	41/9
Lonsdale	42/	41/9	41/6
West Cumberland		41/9	41/6
Lowther	4:2/	41/9	41/6
Distington	42/	41/9	41/6
Solway	42/	41/9	41/6
Maryport	42/	41/9	41/6
Harrington	42/6	42/	41/9

MACHINE VS HAND MADE FILES.

At Sheffield the long controversy on this subject is about to be put to careful and efficient tests. A local correspondent gives efficient tests. A local correspondent gives some leading particulars of the tests. He says: "The advocate of the hand cutting system is to provide a dozen blanks and cut them on one side himself, the reverse side to be cut by Shardlow's patent machines. His opponent is to furnish another dozen to be cut in the same way, various styles of cutting to be illustrated in each case. The blanks are to be well forged and ground, and both parties are to be represented during the cutting process. A consulting ening the cutting process. A consulting en-gineer in whom both sides have confidence has undertaken to send the files to eight engineering firms out of Sheffield, he to re-ceive back the files and reports of the results, the parcels and reports to be opened in the presence of the interested parties. A ENDORSED BY THE BEST ENGINEERS.

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THE IRON MARKET

In the presence of the interested parties. A supplementary test is to be applied by one of the parties forging four files out of a bar of them, the Rheinische Stahlwerke. Consequently the farmers are moving for higher duties on corn, meat, bacon, &c., so as to make things even, but—and here comes the curious part—they will be strenuously opposed by the metallurgists, who are consequently the farmers are moving for higher duties on corn, meat, bacon, &c., so as to make things even, but—and here comes the curious part—they will be strenuously opposed by the metallurgists, who are consequently the farmers are moving for higher duties on corn, meat, bacon, &c., so as to make things even, but—and here comes the curious part—they will be strenuously opposed by the metallurgists, who are consequently the farmers are moving for higher duties on corn, meat, bacon, &c., so as to make things even, but—and here comes the curious part—they will be strenuously opposed by the metallurgists, who are consequently the farmers are moving for higher files out by the former and two by the duties on corn, meat, bacon, &c., so as to make things even, but—and here comes the curious part—they will be strenuously opposed by the metallurgists, who are consequently the farmers are moving for higher files out by the former and two by the duties on corn, meat, bacon, &c., so as to make things even, but—and here comes the curious part—they will be strenuously opposed by the metallurgists, who are consequently the farmers are moving for higher files out of a bar of steel supplied by one of the parties forging four files out of a bar of steel supplied by the other, two of the files being of steel supplied by the other, two of the files being of steel supplied by one of the parties.

The parties of program and two by the duties on consequently the farmers a



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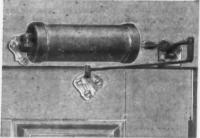
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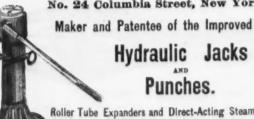
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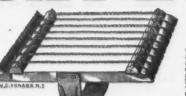


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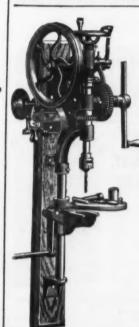
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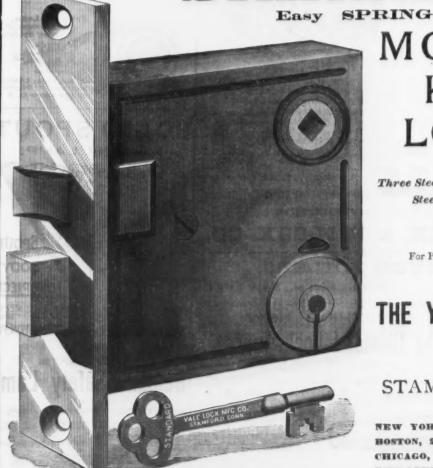
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Total number of furnaces
Existing, June 1, 1886
In blast June 1, 1886
Out of blast June 1, 1886
In course of erection, June 1, 1886
On ordinary pig iron of various districts.
On hematite pigs (about)

This shows a steady fall in the power of This shows a steady fail in the power of production, about 13 furnaces having been stopped in May. The number of furnaces on hematites, however, is slightly larger than it was a month ago. Since these returns were compiled five other furnaces have been stopped in Scotland.

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is quiet and in but moderate demand at the subjoined rates for G. M. B., f.o.b. at nakers' wharves in the Tees, for net cash No. 1 Foundry 32/ Mottled White 31/ White 43 4 29/6 Refined metal 4 29/ Kentledge 4 Forge 28/6 Cinder

The official returns of the Cleveland Iron-masters' Association for the month of May show that the total make has been 211,049 tons, 22,340 tons more than for April; the stocks were 669,772 tons, and the shipments 70,797 tons.

THE HARDWARE TRADES. In London, in spite of the pessimists and the unsettled weather, the run of exhibitions continues gaily enough. Last week in addition to the Colonial and Indian Exhibition we had the Sportman's at the Aquarium, Westminster, and in conjunction to the horse show another sportsman's exhibition at the Agricultural Hall, Islington. When at the Agricultural Hall, Islington. When so many complaints are rife as regards a paucity of business it becomes a matter of interesting inquiry how it is that so many persons have time and means to gratify to search after novelties and visit exhibitions in the manner they do. As a leading business man remarked the other day when conversing on the topic, "it is altogether unreasonable to assume that times are so very bad when people go about seeking entertainment in that fashion. The truth is, taking it all round, there is as little cause entertainment in that fashion. The truth is, taking it all round, there is as little cause for grumbling as there ever was, but, of course, people must complain, and so we go blundering along." At Birmingham agricultural prospects have certainly not improved under the influence of the recent heavy rains, and the unseasonable weather, which had already practically killed the spring trade, is playing havoc with the demand for summer goods. The shipping trade is more satisfactory and the orders arriving from Canada and the Cape, as well as from Australia and New Zealand, are just now of considerable value. Although the cholera in Italy is a disturbing factor, the Mediterin Italy is a disturbing factor, the Mediterranean trade has been for some time past fairly good, and from Egypt in particular the indents have been valuable. At Sheffield the county orders have slackened visably in ighter industries during the last week or 10 hays. Manufacturers account for the check by the broken weather and the strong pros-pect of the best part of the summer being pect of the best part of the summer being taken up by another electioneering campaign. Foreign and colonial indents remain without much change. Some of the local houses are making quiet preparations for resuming the place which they lost in the Spanish market when the French and German manufacturers obtained preferential arrangements, and should the present negotiations be carried through to a successful issue it is calculated that something will be recovered almost at once. American issue it is calculated that something will be recovered almost at once. American and Canadian orders are still arriving in good numbers. Principals representing several local houses in the steel and cutlery trades are now in the west beating up customers while the purchasing power lasts, and in some cases the journey has been justified by conscious successes. Colonial lines. fied by conspicuous successes. Colonial lines have in the last mails made a better show. In New South Wales the fears of further drought have been dispelled by the appearance of abundant rains, and practical proofs of the confidence thus restored have arrived with the news. Western Australia is now receiving special attention from houses

with colonial interests. TIN PLATES.

In London there has not been anything unusual this week in respect of the demand for America, but a pretty good business has been done in some quarters on Australian account. Prices are well maintained, and the generality of the works are reported to be fairly off for work. I quote G.O.B. IC colces 13/3 @ 13/9, f.o.b. Liverpool. At Liverpool the tin plate business seems in a rather unsettled state just now, pending the decision of masters and men at certain works. Another topic which has engrossed attention is the reported large bear sales that have been made lately in America, and this has disturbed the course of business not a little, as the prices at which these sales have been made are below anything yet known here before. Therefore it is not sur-prising that business has been extremely quiet so far as regards the number of inpuiries received and the orders placed. Buyers are not inclined to go in for long lines, as they seem to think prices may go lower yet, despite the fact that the stocks of surplus plates at certain depots are decreasing week by week, and that tin is advancing House in New Haven, which is much dilapdaily, and also that we are in the best quaridated.

ter of the year for the tin-plate trade. What little business there has been doing this week has been chiefly in coke tins, Bessemer steel cokes and Siemens steels with coke finish. Prices are practically unchanged, the bottom price for cokes being still 13/3 IC, and there are some Bessemers still to be had at this low figure; and Siemens, 14/ IC. The demand for charcoal tins and ternes is rather mand for charcoat this and ternes is rather small as compared with the supply, especially of the latter. The difficulty with ternes is the multiplicity of new brands that are offering from all quarters. Ordinary kinds have been selling at 12/6 for a long time, and the tendency this week is toward lower prices than have ever yet been touched—12/3 and even 12/. 12/3 and even 12/.

#### American versus English Bridge Building.

Writing from Sydney, New South Wales, Mr. Walter Shellshear discusses as follows the reasons why American bridge-builders can successfully compete with their English rivals in the colonies: In England it is the usual practice for

In England it is the usual practice for engineers to prepare plans and specifications of bridgework, and invite tenders for the construction of the work in accordance with their plans. It too often happens that the designer has not fully considered his design from a manufacturer's point of view. A great variation in sections of I, L and I irons are in many cases introduced, rendering it difficult for the manufacturer to secure his material without going the round of the merchants. Again, difficult and often very unnecessary smithwork is introduced, and lastly, instead of a simple framed structure, complicated treble and quadruple systems of triangulation are introduced. There also does not appear to be a general understanding as to the quality of material, one engineer requiring one scale of tests and another a very different scale. Now all this must complicate the arrangements of a manufacturer without adding to the quality of material. complicate the arrangements of a manufacturer without adding to the quality or suitability of the work.

In America it is usual for the railway companies to advertise for tenders on a very different system, and it is on this account that the American manufacturers have a very great advantage over the English, as will be seen when their system is considered. In inviting tenders for bridgework in America it is usual for the railway companies to furnish plans and sections of the site, with turnsh plans and sections or the site, with other local information, together with tables giving the standard loads which the proposed structure is to carry, the quality of material and tests to which it will be subjected, and also if the bridge is to be a deck or through bridge. With these particulars the bridge companies are asked to tender, the conditions being that they submit detail the conditions being that they submit detail plans, together with strain sheets, with their tenders, and it rests with the railway companies' engineers to examine the plans and strain sheets to see if they are in accordance with the specified standards. The bridge companies are under the management of bridge engineers, with a trained staff, who make it their business to design work so as to afford the greatest facilities for manufacture; the pins and links and other details are drawn to suit their standard dies, and the sections of iron are those for which they have rolls, for, as most of the big bridge firms have a rolling mill attached, there is no difficulty in the way of collecting material when an order has been secured.

In England the engineer is paid a com-nission on the cost of the work, and there is therefore not the same inducement to study rigid economy as in America, where the bridge company has to study economy in order that he may secure the contract; at the same time the stipulations as to limits of the same time the stipulations as to limits of stress in the structure enable the railway companies' engineers to decide whether the prescribed limits have been exceeded or not. An examination of the plans of American bridges will show that simple framed structures are the order of the day, and that the details are worked out in such a way that there is the greatest out in such a way that there is the greatest possible repetition, thus enabling the factory system to be carried out to the fullest extent. The modern American bridge is a substantial and economical structure, built on strictly scientific principles, possessing none of the erratic peculiarities of the earlier examples of American structures, being, in fact, equal to the best class of bridgework manufactured in England or on the Continent. The whole secret of the succethe American competition is this: In land there is an absence of system from first to last in this branch of manufacture; in America bridge-building has been reduced to a system worked out on sound scientific commercial principles.

Mr. Charles Hallock, who is well known as an experienced traveler, and who has thoroughly studied Alaska and its resources, thoroughly studied Alaska and its resources, is about to issue an illustrated work, now on the presses of the Forest and Stream Publishing Co. It is entitled "Our New Alaska; or, the Seward Purchase Vindicated." The glowing accounts of the country from the pen of Mr. A. P. Swineford, who was so long identified with our most important ironger, interests, have continued toward interests, have contributed toward awakening a special interest in the trade, and have served to pave the way for Mr. Hallock's work among what we hope will become a large constituency.

The manufacture of briquettes is extending in Silesia as elsewhere. New works of considerable magnitude have just been erected by the firm of Cæsar Wollheim & Schwartzkopf, and at the König's Colliery, at Königshütte, to manufacture according to Balke's patent, wherein the residue of starch factories is used as the cementing material. This system is now in successful operation in several places in Germany. operation in several places in Germany.

A novel railroad bridge has recently been constructed at Harriston, on the Toronto, Gray and Bruce Railroad. The novelty lies in constructing the bridge of old iron rails, and is said to compare favorably in cost with wooden bridges

It is proposed to pull down the old State

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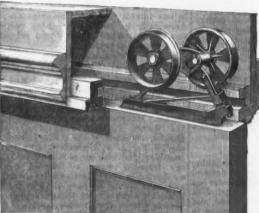
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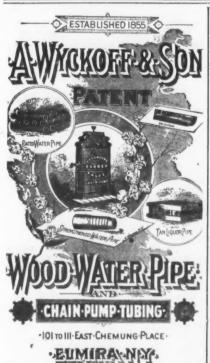
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TITUSVILLE, PA.

The Record of the Spring Lake Charcoal Furnace.

In his forthcoming report on the mines and mineral interests of Michigan Mr. C. D. Lawton, commissioner, gives the following data on the record of the Spring Lake Fur-

This furnace, at Fruitport, in Muskegon County, on the east shore of Lake Michigan, has been from the time it first went into blast extremely successful. It probably has the best record of any furnace in Michigan, and I do not think that the record of this furnace for the past year can be equaled by furnace for the past year can be equaled by any other furnace of its size in the country. If the record was ever equaled in a charcoal furnace the fact has not come to my knowledge. It will be seen that the ore used did not give an extra yield in the furnace, it having been largely soft hematite—Milwaukee mine and Lake Superior mine ores. The word used for coaling was not what kee mine and Lake Superior mine ores. The wood used for coaling was not what would be termed extra, but was certainly good—30 per cent, hemlock and 70 per cent. mixed elm, beech and sugar-maple. The stack is 46 feet high, and the diameter of the bosh is 10 feet 8 inches—not by any means a large furnace. The limestone for fluxing was from Kelly Island. Statement of the working of the Fruitport Furnace for year ended December 31, 1885:

Days run
Bushels of charcoal used
Tons of ore used.
Tons of limestone used for flux
Furnace charges run.
Tons of pig iron made
Bushels of charcoal per ton of iron
Pounds of limestone per ton of iron
Pounds of ore smelted per ton of iron
made. average number of gross tons of pig fron made per day.

Per cent. of yield of ore.

Per cent. of soft hematite ore used.

Per cent. of hard specular are used.

Size of steam cylinders.

Size of wind cylinders.

Size of wind cylinders.

We have age number of revolutions per minute.

27 31/6 lbs. Average pressure of blast...

The Standard of Excellence

AT HOME and ABROAD.

THE

A. S. CAMERON

Steam Pump Works, F00 of East 23d St., New York.

The Standard of Form By Standard of Excellence are two ovens, one on the Player plan, having 24 upright pipes, each 12 feet high, giving from 850° to 900° temperature of blast. The other oven is small, old style of horseshoe or U pipes, 3¼ inches by 6½ inches diameter, and 8 feet high. These give a temperature the same as the other. The average hot-blast temperature is 875°. The charcoal is measured, 2748 cubic inches making a bushel. When made from dry wood a bushel weighs 20 pounds as an average. The furnace is advantageously situated on Spring Lake, so that the ore vessels unload expeditiously in the stockhouse of the furnace. The freight of the ore from Escanaba, put in the stockhouse, is but 75 cents a ton; Kelly Island limestone costs, laid down at the furnace, \$1.25 a ton. Freight to Chicago on the iron is 75 cents a ton; the same to Cleveland. The company have 45 coal-kilns—20 rectangular, and 25 round ones. The former hold \$20 or co cords of word, and the

Cleveland. The company have 45 coal-kilns—20 rectangular, and 25 round ones. The former hold 80 or 90 cords of wood, and the latter 60 cords. The wood costs from \$1.25 to \$1.75 a cord. Wages paid, \$1.25, \$1.40, \$1.50 and \$2 a day.

The ore used in 1885 was one quarter Lake Superior mine No. 1 specular, one-half Lake Superior mine hematite, and one-quarter Milwaukee mine ore. The ores bought for 1886 are Coly, Lake Angeline and Cleveland No. 1 hard ore. From January 1, 1885, to July 1, 141 days, the furnace made 55 tons of iron a day average, using an 55 tons of iron a day average, using an average of 80½ bushels of charcoal per ton. For the week ended April 4, 1885, ton. For the week ended April 4, 1885, seven days, the total product was 441 tons, using an average of 68½ bushels of charcoal per ton, the ore yielding 60½ per cent. in iron. The product runs up to 68 and even 73 tons of iron in a day. These statistics I have taken from the books of the company myself, the books having been submitted to my inspection. Mr. J. C. Ford, the manager, and Robert Lomeraux, the foundryman, are, it need not he said, skilled foundryman, are, it need not he said, skilled in their work.

#### A New Iron Enterprise in South Russia.

Engineering reports that a company has been formed, with a capital of £2,000,000, to work the iron deposits of the Krivoy Rog district, which some years since were inves-tigated by a number of Philadelphia capital-ists. Situated in the Ekaterinoslaff Gov-ernment, they first became thoroughly known after a systematic survey conducted known after a systematic survey conducted by the Russian authorities a few years ago. The Ekaterinen Railway was then constructed by the Government to connect the deposits with the coal fields of the Donetz Valley, and since the completion of the line in 1883 upward of 3000 tons of ore have been sent regularly every month to the works of Hughesovka alone, the price, inworks of Hughesovka alone, the price, inworks of Bilbard and 1,345,301 same time last year. Shipments from Spain during the first two months: 2½ copecks a pood, or 2/8 per ton. Last year a fresh outlet was opened in Poland, a quantity being sent from Krivoy Rog to sevquantity being seat of the first state of the iron and steel works in the Vistula region. Yielding 68 per cent. of splendid metal, the ore gave such satisfaction that an international company, favored by the Russian Government, was formed to develop the mines on a large scale. The capital subscribed was 19,500,000 rubles, of which the Warsaw Steel Works have furnished 2,500,000 rubles; Lilpop & Rau, 1,500,000 rubles, and the remaining 15,-1,500,000 rubles, and the remaining 15,500,000 rubles have been made up by foreign capitalists, including Cockerill & Co., the Grande Société Franco Italienne des Houilles et Foches à Paris, the Reinische Stahlwerke, of Ruhort; the banker Surmont, of Aix-la-Chapelle, and Messrs. Ransome & Co., of London. As an encouragement the Russian Government have agreed to give the company an order for 70,000 tons of rails, 30,000 tons of railway material, &c., amounting in value to over £1,000,000, of which a considerable amount will be paid by the Government in amount will be paid by the Government in advance. A clause in the agreement also provides for a bounty on steel rails manufactured on the spot. For some time past agents of the syndicate have been completing the agreements at Electronical for starting the concern, and it is believed that it will be placed on a good working footing by the winter. Another scheme, favored by Krupp, for establishing a gun foundry

for the Russian Government in the Krivoy Rog district has also been discussed during the spring, but the terms asked by the Gerthe spring, but the terms asked by the German syndicate were not favorable enough to please the Minister of War. The project, however, has not yet entirely fallen through, and, even should no foreign capitalists embark upon the enterprise, it is believed that the Ministry of War itself will establish an arsenal there for supplying weapons for the use of the Black Sea fleet. At present the guns mounted on the coast batteries and men-of-war of the Euxine are manufactured in the Ural Mountains or at St. Petersburg. in the Ural Mountains or at St. Petersburg, and the cost of the conveyance over many hundred miles of railway is very heavy. The saving effected by establishing an arsenal in the Krivoy Rog district would thus justify a considerable subsidy.

#### Foreign Markets.

FRANCE.

Paris, June 10, 1886.—Metals—There has been a better feeling and more doing. Copper is slightly cheaper. Tin better, and Lead and Spelter show no change. We quote at the close: Copper.—Chill Bars, 106 francs % 106 kg; Ingots and Slabs, 110; Best Selected, 112.50, and Pure Corocoro Ore, 106.50. Tin.—Banca, 266; Billiton, 282.50; Straits, 261.50; Australian, 262, and English, 262.50. Lead, 32 @ 33, and Spelter, 37.26 @ 38. Iron.—A higher range of values at length seems to obtain in the French Iron market, for even in this city, where prices have ruled so low, the price of Merchant has now been raised to 13.50 francs % 100 kg., and Flooring Iron to 12.50. In the North all makers appear resolved to maintain the current price and reduce production. Old Rails cannot be had under 7 francs. Puddling Pig remains quite low, 3.50 francs. in the Northern Department prices have been firmly established at 12 francs, and their raising to 12 francs seems imminent. Sheet Iron is firm at 14 francs. There is an improved outlook in the Haute-Marne; consumers are at length coming forward to secure their requirements, induced by the rising tendency. Orders have been numerous and large enough during the week to require a month's production to fill them. In the Champagne prices have steadied. Coal.—Demand for Coal has been the reverse of active; still there has been no further decline.—Moniteur des Interests Matériels.

#### BELGIUM.

BELGIUM.

BRUSSELS, June 10, 1886.—Iroa.—The agreement among Belgian ironmasters did not at first include the two biggest concerns, Cockerill and Grivignée, but since they have joined the syndicate the situation has been strengthened, the more so as a committee has now been appointed to keep production within certain bounds under heavy penalties. Should this stop prove successful, the syndicate will probably try to come to an understanding with rolling mills in Germany with a similar view. If carried out this would be an important move in the right direction, and after a while the Iron industry on the Continent might in this manner be once more put on a sounder basis. Prices are meanwhile quite firm. We quote Luxembourg Foundry Pig 40 francs, Charleroi 5.75; Puddling at Charleroi commands 3.70 @ 4.70, and in Luxembourg 38. Bar Iron is held at 10 francs, with 75 centimes difference between numbers, and 50 centimes if for export. Merchant No. 1, 10.50; No. 2, 11.25; No. 3, 12. Beams may be quoted 10 francs; Angles, 11.50; Large Plates, 11.50; Sheets No. 2, 12.50; No. 3, 14.50; Commercial 16.50; Thin, 18.50; and No. 4, 30.60 francs, all \$\mathbf{p}\$ 100 kg. The Braine le Comte and Savigliano companies have been adjudicated the building of the Cremona, Italy, Iron rairoad bridge, which will weigh some 10,000 tons, the cost being something like 5,000,000 francs. Coal.—The adjudication to furnish the diovernment with Coal has established a very low price, currently established since.—Moniteur Industriel.

#### GERMANY.

GERMANY.

Hamburg, June 10, 1886.—Iron.—The Rhenish-Westphalian Iron market has on the whole remained depressed during the week. There is, it is true, now and then a slightly better demand, without, however, justifying great expectations for the near future. In many instances competition renders the depression in certain branches still worse, and but few of them, through syndicates, succeed in maintaining prices on anything like a steady level. And syndicates for the reduction of output are the best and only remedy to keep the situation from still becoming worse. This seems to be now acknowledged on all hands. We cannot report very favorably on Pig Iron. There is less Spiegel being shipped, a decline being cabled from the United States, but the demand for France and Belgium has improved; prices are, therefore, tolerably well sustained. Puddling Pig has also kept its own; in the Siegen district stocks are partially exhausted. Prospects being poor, however, more blast furnaces are likely to be blown out before this month comes to a close. Foundry Pig remains unfavorably situated in consequence of the little doing at foundries and machine shops. Thomas moves off with a good deal of ease and does not weaken. They quote 10 % 12 % Spiegel, 46 @ 49; Thomas, 38 @ 39 marks; Luxembourg, 38 francs. Rolling-mill products remain neglected and low. The domestic demand for Boiler Sheets is a little livelier, but not for export. Siegen Thin Sheets are 1 mark cheaper, and Wire Rods are still dull and depressed. Car-makers still lack sufficient work. Metals.—Spelter is in improved demand; Copper quiet; Lead unaltered.—Borsenhatle.

HOLLAND.

#### HOLLAND.

ROTTERDAM, June 7, 1885.—Tin—At the late Netherland Trading Co.'s sale 22,182 slabs Banca averaged 58 guilders \$\overline{3}\text{ bigs.} and 1189 Billiton 57.6214. The favorable statistics of the 1st since stimulated the demand, producing an upward movement which has carried Banca to 59 and Billiton to 58.75.—Koch & Vlierboom.

	1884.	1885.	1886.
	Tons.	Tons.	Tons.
Calamine	5,456	12,356	7.842
Pyrites	158,795	206, 269	172,696
Iron Ore	1,115,367	1,021,978	1,196,308
Ingot Copper	3,363	5,707	6,411
Quicksilver	768	489	295
Pig Lead	31,336	31,175	27,942
Total	1,315,085	1,277,969	1,411,494
	-	Revista 1	dinera.
C.			

#### AUSTRIA.

Vienna, June 7, 1886.—Fron.—The Iron market here has been moderately active and steady. We quote Pig 43 ⊚ 54 florins ⊌ ton: Merchant, 95 ⊚ 122,50: Sheets, 140 ⊚ 175, and Beams, 100 ⊚ 105, There has been no change in Metals.—Austrian Trade Journat.

#### EAST INDIES.

EAST INDIES.

SINGAPORE, May 6, 1886.—Tin.—Sales have been very small, owing to continued scarcity, and the price touched \$35.59, but is weaker again, there being sellers to-day at \$35.30. Shipments last month were small, and are not likely to be large for this month. Tonnage.—The market is well supplied, but rates tend upward. For New York the August is accepting slightly lower rates for light stuff, but the E. Accame quotes as before. For Boston the Hooghy is loading. Exchange is somewhrt uncertain, but there is one buyer at 3/4½ for six months' sight credits on London. Shipments from the Straits Settlements to the United States during the first four months 21,851 piculs, against 12,689 in 1885; 22,875 in 1884; 1888 in 1883; 39,176 in 1882, and 63,913 in 1881.—Gitfillan, Wood & Co.

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# The Iron Age

New York, Thursday, June 24, 1886.

JAMES C. BAYLES - - Editor.
CHAS. KIRCHHOFF, Jr., - Associate Editor. JOHN S. KING. - - - Business Manage

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#### The French Drawback System.

Quite an interesting struggle is going on at the present time in France over proposed changes in the drawback system of that country, which, so far as we know, has not been introduced by any of the manufacturing nations that rely upon a protective tariff to foster their industries. In may be well to briefly review the history of the French drawback legislation, since it represents many of the different phases of a question which should be given some attention in the United States. The drawback system was organized by the law of the 5th of July, 1838, its principal feature being that it provided for the importation, free of duty, sanguine associates. Too much zeal is danof foreign raw material to be used in manu- gerous, and this could not be better illusfacturing finished goods for export, with the | trated than by quoting the following table, reservation made that the latter be of the printed in an article on the wonders of Biridentical material. After frequent and mingham, Ala., in a recent issue of the New pressing agitation it was decided to modify York World : this, and the law of February 15, 1862, was passed, introducing what is generally known as the "French acquit-à-caution system." Under it raw material might be imported into any port of France in quantities equivalent to the actual amount required in producing a given article, allowances being made for waste. A certificate for duties paid was issued, which was negotiable, the sums it called for being paid out to any person exporting the corresponding quantity of finished goods from any other port of the country. Thus a producer of bar iron in the North of France might import English mill iron, and sell his certificate to a rolling mill on the Mediterranean, who would in selling ship-plates made first looked startling, but a closer examinafrom French pig for delivery in Italy tion will prove them to be based on a prinlaw of 1862 included in this system pig tons; No. 1 Alice, 60 tons, and No. 2 Alice,

raution system to pig iron alone, again enforcing the identity clause for the other raw materials by an act passed on the 9th of January, 1870.

Last fall the pig-iron manufacturers of Eastern France entered an energetic protest against this last remnant of the old markets were invaded by foreign competitors, who pay only a small premium to drawback in reality goes toward practically tons per day. annuling the benefits of the duty. The French Government submitted the question to its Board of Arts and Manufactures and they in turn called for an expression of opinion from the leading Chambers of Commerce. The replies are of course contradictory, since the interests of different sections are variously affected. The effect of the system is to aid the manufacturers of some parts of the country at the expense of the makers of raw material in others. Let it be assumed for the sake of illustration that this method of making drawbacks were in vogue in the United States, and that there existed an extensive iron trade on the Pacific Coast, shipping a considerable proportion of its product-say, miscellaneous castings, hardware and manufactured iron-to Australia, India, China and Japan. The result would be that heavy quantities of foreign pig iron would be brought into ports on the Atlantic Coast, the importers selling their drawback certificates to exporters on the Pacific Coast at prices ruled by the supply and demand. An argent inquiry for them would amount to a premium on imports, or, what is the same thing, a sharper competition of foreign pig against the domestic article in the Eastern markets. The pig-iron manufacturers of the Atlantic States would therefore be practically sacrificing a part of their own market to aid rolling mills and foundries thousands of miles away to compete with foreign rivals at the antipodes. It will be understood, then, how vigorous are the protests from the North of France, threatened by English iron, and from the East, where the cheap German pig presses on the market, and how anxious are the manufacturers of iron who have an outlet on the Medditerranean to perpetuate the existing condition of affairs. Yet there may be circumstances where the French drawback system may prove beneficial to all concerned, notably in this country of magnificent distances. Our own drawback laws are exceedingly crude. They not alone contain the indentity clause about which, of course, there may be much dispute, but they also provide that 10 per cent. of the duty collected be retained by the Government. Is is only just that the cost of collecting the duty in the first place, and of watching that there is strict compliance with the law, be charged to the manufacturer, but it is absurd to claim that this amounts to anything like 10 per cent. of the full duty. A reduction to one-half or even one-quarter of that amount would in many cases put American manufacturers in a position to carry off business in neutral markets in which they cannot now compete.

During the past few weeks a compilation has been going the rounds of the press which shows considerable activity in the building of new blast-furnace plants in the South, where undoubtedly the most rapid extension of capacity is going on. It is significant that the majority of these enterprises have been initiated by men already deeply interested in the young iron industry of Alabama and Tennessee, and we know of only one case in which such ventures are based on an apparently inadequate financial foundation. This speaks well for the past results in iron-making there, and augurs well this strict construction and application of for the future. It proves that the South does not need the "boomers," and the only fault we have to find with the leading representatives of that section is that they do not

Iron Furnaces.		Daily
Name.	No.	tons.
Sloss Furnace		75
Sloss Furnace	9	125
Alice Furnace	1	60
Alice Furnace	2	140
Eureka Furnace	1	80
Euraka Furnace	2	70
Mary Pratt Furnace	1	60
Woodward Furnace	7	125
Williamson Furnace, now building	1	60
Pratt Furnace, now building	1	140
Pratt Furnace, now building	8	140
De Bardeleben Furnace, preparing		
to build	1	100
De Bardeleben Furnace, preparing		. 200
to build	2	100
Thomas Furnace, preparing to build	1	100
Thomas Furnace, preparing to build	2	100
The state of the s	-	-
Totals	21	1,475

It may be confessed that these totals at obtain the amount of duties collected from ciple which would give a plant of five fur- losing the protection of the statute. The his fellow-producers in the North. This naces in a row as they exist elsewhere in names of the special partners, moreover, law therefore brushed aside the identity this country the beautiful total of 15. The must not appear in the firm style or title, clause and gave the exporter the advantage local statistician who has provided the ma- but it is usual for their names to be printed of sharing with the importer the savi g in terial to the unsophisticated reporter of in smaller letters on the signs and letterfreight due to importation at the most the World probably meant to convey to that heads, followed by the word "special." In accessible markets, and exporting from enterprising person that Sloss No. 1 had a some States the law positively requires this. heaters were \$7, while common labor com- by it in many places where more expensive ports nearest to competitive points. The capacity of 75 tons per day; No. 2, 125 If there is only one general partner, the manded \$1.40. In 1885 the price of iron devices were formerly used. In making an iron, scrap and old iron, blooms, billets, &c., 140, &c. Calmly adding these figures, and they be used in any case to denote the of the heaters had fallen 48.7 per cent., and remembered that, as there is no fuel item,

acquit-à-caution system, alleging that their allowed at least a year before the Birmingham district will invade their markets with a share of its estimated product of 1475 tons and steel, while the greater part of the enumerated above did not quite make 500

#### Limited Partnerships.

Those who put capital into limited parterships will do well to take the greatest care that the details of the law in regard to the formation of such concerns are strictly observed and scrupulously carried out In the light of recent litigations there would seem to be either much laxity and want of prudence or profound ignorance of the law. The special partner frequently finds that his immunity from personal liability for the debts of the firm, which it is the purpose of such a partnership to secure, has been vitiated by some defect of organization, or some act connected with the management of the When we speak of a limited partnership it is perhaps necessary to distinguish it from a limited company. The difference quite important in its effect upon the rights and claims of the parties. A limited mpany is a corporation with a system of joint stock, and acts through elected officers. It is called "limited" because, as in most corporations, the liability of its stockholders for debts of the company is confined to the par value of the stock held by each. But a limited partnership is like any other partnership, and is managed and the business done in its name as such, and its members, with the exception of its special partner or partners, are personally responsible for all debts contracted. The great advantage and value of such an arrangement is that it enables capitalists who cannot or who do not desire to engage in active business themselves, and who will not imperil their whole the risk, in case the enterprise is unsuccessthat amount. The effect on business in gen eral of the employment of capital in this way is undoubtedly beneficial. It stimulates fant industry or newly-formed busines is enabled to grow and extend its operations. It is not at all surprising, therefore, that

so many partnerships of this kind have been formed in recent years all over the country. But it is surprising that there should be such vague ideas in regard to the nature of the relation and the method of legally contracting it. A limited partnership in all the States is a creation of statute. These statutes specify the necessary step of procedure. They point out what must be done in order to protect the special partners. And if any of these things are omitted, if the statutes are not strictly complied with in every respect, the partnership is not 'limited," but all the members, including the intended special, become liable to the fullest extent. There is no other way in which a limited partnership can be formed. No mere agreement between the partners will have that effect. No ignorance of the law will excuse. It may be thought that the statute is too harsh and severe. The theory of the law is that, if the liability of a partner is to be limited at all, the system hould be hemmed in by safeguards. Nothing would be more easy than for a member of a firm when sued to set up that that the first effort of employers is to scale fore, for the protection of creditors and to the statutes have this object in view.

In most of the States two or more persons may form a limited partnership for almost any business except insurance or partners, but there must be at least one general partner, who shall be responsible for the debts of the firm to the full extert of his individual assets. The general partner must be the only one to manage the business. The special partner has no right to intefere. More than this, if he does interfere he will become liable as a general partner. He has a right to examine the books and give advice, but he cannot control or direct. He cannot even be employed as att ror agent by the firm without

amount of capital contributed by each spebe an affidavit made by one or more of the general partners to the effect that the sums specified in the certificate have been actually and in good faith paid in in cash.

This certificate, together with the affidavit, must be acknowledged before a notary public, like a deed or mortgage, and then filed or recorded in the office of the clerk of the county where the business is to be carried on. The terms of the partnership must then be published in two newspapers, once a week for six weeks. All the material facts, such as the amount of capital contributed, must be published. Any failure to comply with se rules is a vital defect. The provision of the law across which business men have stumbled most frequently is the rule which requires the capital to be paid in in cash. This must be done on or before the first day on which the partnership commences. The meaning of the word "cash" is often misunderstood. The cases hold that it must be money. One State, Pennsylvania, allows the special partner to contribute goods, but in no other State is such an arrangement good. The check of the special partner is not cash, even though there is money in the bank to pay the check, unless the general partner draws out the money before the first day. It has even been held that a certified check will not answer. case of Durant against Abendroth, decided in New York, the facts were these: The certificate and affidavits were filed on December 23. The former stated in usual form that the special partner had actually and in good faith paid in \$10,000 in cash. The partnership was to commence on January 1. Abendroth as a matter of fact, only gave his check for fortune by forming a full partnership with the amount, which was not paid until Janlimited liability, to advance money to a uary 2. On the failure of the firm the struggling enterprise, and at the same time special partner was held liable in the same become a dormant partner, with the right to manner as a general partner for all the debts share in the profits made, willingly taking of the concern. It was said by the court the risk, in case the enterprise is unsuccessful, of losing the amount put in, because ties that the sum should be paid at the time they know that they can lose no more than of the commencement of the partnership, nor the good faith manifested by the actual payment, nor the consideration that no injury resulted to the creditor from the fact trade, gives employment to labor, puts so that the statement was untrue, could remedy much more money into circulation, and it is the defect. In like manner any error in sometimes the only method by which an in- the publication of the terms, even if unintentional, has the same damaging effect. Thus, where the amount contributed by the special partner was published as \$5000, when in reality it was only \$2000, the special partner was compelled to pay the debts. In this case, however, if the error was due to the negligence of the publisher, the special would have the legal right to recover from him the amount of damage he himself sustained. The special partner, moreover, cannot impair the assets of the firm by withdrawing any part of the capital which he originally put in. He cannot receive dividends or interest unless the earnings of the concern justify it. But he may loan money or credit to the partnership and hold it like any other creditor, except that in case of the insolvency of the firm no special can claim as creditor until all the other creditors are satisfied. And no limited partnership can make an assignment with preferences to any particular creditor. All the creditors must share equally. Any attempt to make it otherwise, with the knowledge and con-

times in which prices and wages are low he was a special partner, in case a private down the latter, to compensate for a prosagreement were allowed by law. There-pective decline in profits. It is urged, and apparently the body of workingmen believe prevent fraud it is held that this strictness it, that they must first bear the burden of should be maintained, and it will be noticed bad times, and that it is only when manuon examination that all the provisions of facturers dare not demand a reduction of wages that their returns on investments are attacked. It is an axiom, too, with agitators and labor reformers that, being more helpless, common labor is ground down more banking. There may be any number of special mercilessly than the skilled workman. It is not often that figures are available to clearly show the fallacy of such a position, and special interest attaches, therefore, to valuable data which are likely to have escaped general attention, since these are published in the last volume of reports of the Bureau of Statistics of Labor and Industries of New Jersey, a document probably rarely consulted outside of the confines of its own State. Mr. Frederick J. Slade, treasurer of some other agents are frequently overto the report, showing the changes in the selling price of iron and in the rates of wages paid by that concern for 15 years. In 1872, when the selling price of finished iron was \$97.63, the puddlers' earnings however, the windmill enjoys a fair degree were \$4.94 per day, those of the small mill of popularity, and good work is being done words "and Co." cannot be used, nor can had been reduced 58.7 per cent., the wages estimate of the cost of working it must be but the Government yielded to the protests of some sections, and restricted the acquit. a of capacity, the World expert reaches the simple as is the case with an ordinary part.

sent of the special partner, is followed by

The claim is advanced incessantly during

the usual penalty.

total quoted, when in reality there are only nership. There must be a certificate drawn clined only 28.5 per cent. The earnings of eight furnaces built, three building, three still up and executed by the partners in accord- the highest paid classes, those of the heatin the earliest stages of construction, and lance with the provisions of the statute. ers and puddlers, follow the fluctuations in one is only planned as a possible future Usually this contains the name of the firm, the price of iron much more closely as a contingency. The World has discounted the future pretty thoroughly, and the furnacemen business, the names and places of residence to decline in 1885 to \$3.59, while the pudof the Lehigh and Schuylkill valleys will be of all the partners, general and special, the dlers remained stationary at \$2.81, in spite of a fall from \$41.63 to \$39.37 in the price of cial partner, and the period during which iron. We have no doubt whatever that if the partnership is to last, specifying the the data were available the line reflecting exporters of French manufactured iron and steel, while the greater part of the enumerated above did not quite make 500 which it is to commence and on the ups and downs of profits would indicate which it is to terminate. There must also tudes to which the other figures are subject.

#### English Exports to the United States.

The Board of Trade returns for the first five months of 1886 show clearly how opportune have been to English ironmasters the increased sales of iron and steel to this country. The following shows the total exports from Great Britain for the first five months of the year :

Exports of Iron and Steel from Great Britain-

Five	Months.		
	1885. Gross	1886. Gross	Inc , + Dec., - Per ct.
Pig iron	tons. 354,932	tons.	+ 2.9
Bar, angle, bolt and rod			
iron	106,679	95,497	-10.4
Railroad iron	291,719	272,848	-6.4
Wire	21,312	18,531	-13.0
Hoops, sheets, boiler			
and armor plates	121,454	118,889	- 2.1
Cast and wrought iron.	134,915	148,338	+6.2
Old iron	27,188	52,987	+95.2
Steel, unwrought	21,119	89,179	+85.5
Tin plates and sheets	127,949	148,852	+12.4
Manufactures of iron			
and steel combined	5,326	4,557	-14.4
Iron rails	5,884	4,9934	-19.9
Steel rails	203,301	160,202	-21.2

There has been a decline in almost every item in which we are not purchasers, and wherever there has been an increase the heavier sales to this country are either largely or entirely responsible for it. The following table has been compiled to illustrate this fact. It gives the shipments to this country and the percentage which they constitute of the total exports:

Exports from Great Britain to United States,

1	Tive Mo	onths.			
	1885. Gross	1886. Gross	Percent total	age of	
	tons.	tons.	1885.	1886.	
Pig fron	45,254	118,017	12.7	32.3	
Bar, angle, bolt and	-				
rod	795	1,762	0.7	1.8	
Railroad iron	5,044	10,484	1.7	8.8	
Hoops, sheets,				0.0	
boiler and armor					
plates Cast and wrought	2,645	3,576	2.2	8.0	
Cast and wrought					
iron	611	793	0.5	0.5	
Old iron	8,473	25,812	12.8	47.8	
Steel, unwrought	5,052	18,556	23.9	47.4	
l'in plates and sh'ts	97,600	116,567	76.3	81.0	
Steel rails	4,848	10,114	2.4	6.8	

The most prominent increase has been in the case of pig iron and of old material. So far as the former is concerned, we have been taking from Great Britain during the first five months of the year nearly one-third of its entire exports, against one-eighth last year. Much of this business was done during the excitement last fall, and the long period of dullness in Bessemer pig indicates that for months to come this rate of shipments will not be kept up, the arrivals probably being limited more than lately to piegeleisen and a small quantity of Scotch foundry irons. Our furnaces using imported ores are underselling the foreign metal, the difference in duty being as about \$1.10 to \$1.20 per ton on the iron in the ore to \$6.72 per ton on pig iron. The old-material imports will surely fall off during the next few months, while steel rails will probably show an increase. It must be remembered, however, that during the balance of this year the shipments to Southern ports on Mexican account will be large, and should not deceive those who superficially examine the returns. We may add that rails are also included in "railroad iron," the figures for rails being a special return. The exports for tin plates are significant. Until now this year we have been taking not less than 81 per cent, of the total exports from Great

It may be of interest to note in this connection what valuable buyers to the ironmasters of Great Britain are the leading colonies, which we have grouped as under, covering the period of five months:

Material.	No	tish rth orica.	East	Indies,		tral-
	1885.	1886,	1885.	1886.	1885.	1886.
Pig iron Bar, angle,		11,012	Not sp	ecified.	Not	spec.
bolt & bar Railr'd iron.	8,767	7,106 18,145	25,528 112,116	28,152 129,061	20,518 36,788	17,888 48,066
Hoops, sht's, boiler plate Cast and	4,001	8,367	22,293	21,567	84,540	30,158
wr'ght iron Tin plates	8,234 4,848	3,680 4,011	26,421 Not sp	21,472 ecified.	89,572 8,245	37,418 1,592

The greater value of this trade lies in the fact, particularly so far as the East Indies and Australasia is concerned, that it is in the more finished forms of goods.

Steam has become so extensive in its application to power purposes that the advantages to be derived from the employment of the New Jersey Steel and Iron Co., of looked. Until recently this was particularly Trenton, has compiled a diagram appended true as regards wind-power, and it is only a omparatively short time ago that engines designed to utilize it commenced to attract the attention of engineers to questions connected with this class of motors. At present.

plant, oil and attendance. The last, moreover, is a small item and calls for little, if any, skill. Five per cent. per annum has been assumed to cover repairs and depreciation, and 5 per cent. more to cover interest, and with these figures the economy of the windmill for certain kinds of work, as, for example, pumping water into tanks, drainage, &c., has been strikingly shown A better appreciation of the importance of these facts will stimulate in a great measure the growth of the windmill industry, and will secure the adoption of the motors for work which they are well adapted to perform, and which, without them, is often carried out with difficulty and unsatisfactory results.

#### Tariff Revision.

Mr. Morrison is "crushed again." Year after year during a conspicuous, but not prominently useful, Congressional career he has come to the front with his little bill to reconstruct the entire tariff system of the country. The thought that the great American people were groaning under the burdens of war taxation and awaiting the coming of Morrison the deliverer, has probably kept him awake nights. Like all great reformers he is proof against discouragement. Repeated and emphatic assurances that the people do not want deliverance at his hands have only intensified his desire to render his oppressed fellow-countrymen this distinguished service-and, incidentally, do British manufacturers a favor which they would certainly appreciate. This year Mr. Morrison felt certain that the supreme moment of his career had come, but again Congress has quietly, but effectually, sat upon him and his little bill. No doubt, like the unhappy possessor of a smashed hat, he will ask the house to oblige him by rising that he may recover it; and after punching out the dents and restoring it to a semblance of its former shape, will again offer it. If so it is probable his honorable colleagues will amuse themselves by playing foot-ball with it and finally kicking it out the window. We do not know that we have any occasion to deplore Mr. Morrison's misfortunes as a tariff reformer. The spirit in which he approaches the work he has assumed is not the Bland dollar for a series of years, in that which commands or merits the confidence of the American people. There is a the first five months of 1886: vast difference between the honest tariff reformer and the man who is continually trying to enter the thin edge of the freetrade wedge, which, when driven home, is to split our industrial system asunder. Having no sympathy with the principle of protection to home industry, Mr Morrison is not one who can be safely trusted to reconstruct the schedules of the tariff and correct its inconsistencies.

And now Mr. Randall takes his turn at the work. That he has had an important share in defeating the consideration of Mr. Morrison's bill and saving the country a tedious and profitless tariff debate, is something of which Mr. Randall should be proud; but the attacks upon him by newspapers with freetrade proclivities seem to have impressed him with the idea that he needs to vindicate himself from the charge of an unintelligent and dishonest partisanship in the protec To show that he is not ignorant of the fact, or unwilling to admit, that the schedules and administrative pro visions of the tariff can be advantageously modified in some respects, and made at once more consistent and more in harmony with the present state of the arts, Mr. Randall proposes to introduce a tariff bill which shall show the country what sort of a measure he and his friends are willing to support. This course of action seems to us unnecessary and not a little dangerous at this time. The critic who condemns a bad picture does not need to vindicate the intelligence of his judgment by accepting the challenge to paint a better one. The session is drawing to a close, and there is not sufficient time for the proper consideration of a tariff bill. No good could come of its introduction that it is to be taken up next year. The except to give Congressmen a chance to make the speeches they have prepared ferred until to-day, the 23d, when the West for the edification of admiring constituen cies. Mr. Randall's bill is not to deal exclusively with internal taxes, but with customs charges and regulations as well. Speaking of it, Mr. Randall says: "The bill will have certain provisions of reform in administrative methods which are not based upon mere speculative notions of improving the efficiency of the means of collecting the revenues, but are the results of practical experience in the workings of that branch of the service. These are simple and easily understood, and will render frauds practically impossible and facilitate official busi. ness. The bill also equalizes duties and corrects many of the incongruities of the present statutes. This is an important feature. It does not propose to reduce duties, but to equalize them, and in no instance has the idea of protection of American industry been lost, but, in fact, raises duties in some instances where obviously necessary." Of the metal schedule Mr. Randall says :

The notion of free raw material is entirely dis carded. The labor engaged in those branches of ndustry is just as much entitled to consideration as in any other branch. Pig iron, copper, lead and nickel will not be disturbed, although pig ron, in justice to labor, might be increased slightly in order to give the labor in furnaces proper con-There are several forms of manufactured iron which require an increase of duty as a matter of self-preservation. In iron beams, for instance, the Belgians have already run England out. Even the starvation rates of wages in Engand do not enable the English manufacturers to the 2-cent basis.

withstand the competition of Belgian beams, and we now find them coming into our markets and driving our home production out even at the low prices of our home article. I believe contractors in some places are using these Belgian beams in our public buildings. As for tin plate, that is a vast industry in the United States, consumes a large amount of partially manufactured mate-rial, and employs millions of capital and thousands of hands. It is proposed to raise the duty on tin plate, as it was reduced to a practically free-trade rate in the existing statute. Steel rails, now \$17 a ton duty, can stand a reduction, as our processes of manufacture and mechanical appliances are such as to overcome foreign competition at a lower duly without affecting labor. You must un-derstand that the great metallurgical industries of the country will not be disturbed, except where it is for their benefit, and particularly in highly finished articles like cutlery, now almost driven out of the market by cheap, worthless foreign cutlery, entered through undervaluation and perjury.

Mr. Randall further says that wool is not to be put on the free list, and that no changes will be made except where they have been suggested by the experts who have had the details in charge, and with the acquiescence of the parties interested. "This is to be a practical bill and treats the whole subject and everything in it from a practical standpoint. This may be said to apply to articles under the general classification of cotton and cotton goods, pottery in all its branches, silk and silk goods, woolen goods, wood and all other articles which may be embraced in the bill."

This is all very interesting, but we still think that if Mr. Randall feit impelled to bring in a reasonable tariff bill he should have done so early in the session. At this stage his measure has no chance, and next year it may prove an embarrassment.

The decline in silver has become a matter of alarm to many, the price during the past months being the lowest on record in the London market. It is beginning to shake the belief of some even of those who insisted that if we continued to coin \$2,000,000 monthly under the provisions of the Bland bill the metal could be rehabilitated. The fall has been going on at a very rapid rate of late, and it is interesting to note how much intrinsically the value of the standard dollar has fallen. The accompanying table gives the price of silver, 925, fine, in the London market, and the value of the silver in semi-annual averages, and the increase for

	fine. Stan. dol. ence. Cents.
	3.20 93.58
1877, second half 5	
1878, first half 5	
1878, second half 5	1.82 87.02
	0.54 85.69
	0.05 84.85
1880, first half 5	
1880, second half 5	2.23 88.55
1881, first half 5	1.66 87.58
1881, second half 5	1.65 87.50
1882, first half 5	
1882, second half 5	1.55 87.40
1883, first half 5	0.49 85.60
1883, second half 5	0.68 85.90
1884, first half 5	0.89 86.28
1884, second half 5	0.44 85.52
1885, first half 4	9.24 83.50
1885, second half 4	7.94 81.30
1886, January 4	6.78 79.23
1886, February 4	6.68 79.15
1886, March 4	6.78 79.33
1886, April 40	5.39 78.64
1886, May 4	5.41 76.99

The dangers and the inconvenience of the continued coinage of the Bland dollar have been so frequently dwelt upon that it is quite unnecessary to emphasize the teachings of this series of figures. The pressure which low prices of silver exert in other directions has long been clear in some branches of trade. We need only allude to the advantages it gives to the producers of copper in Chili and the effect it exercises upon the competition of India for the grain trade of Europe.

A few hours after we had gone to press last week the signatures were appended to the greater part of the scale which is to be the basis for the payment of wages in the greater number of the iron works in the West for a year to come. The roll-turners scale, which was one of the new features brought forward by the Amalgamated Asso tion, was held back with the understanding discussion of the nailers' demands was deern Nail Ass ference. The scale accepted by both par ties represented is nearly identical with that of the preceding year. In the guide, 10 inch, hoop and cotton-tie mills the base price is changed from a 41/2-cent to a 2-cent card rate, the scale, however, remaining practically the same with a few slight alterations.
The principal advance has been in the tin
and block plate mills. The report that the
manufacturers of the Mahoning Valley would appoint a conference committee to meet a similar body from the Amalgamated Association is without foundation, as they will sign the scale when presented.

The New England Manufacturers' and Mechanics' Institute building, in Boston, recently purchased by the Metropolitan Horse Railroad and used by the company as a storage and repair shop, was entirely destroyed by fire on Monday, causing a loss estimated at \$400,000. Eight workmen lost their lives, and the property burnt com-prised 400 horse cars. The building was erected in 1881 for exhibition purposes, and covered 5 acres, its lateral extent being 250 The space bounded by the gallery foot. fronts was 400 feet long and 126 feet wide clear of columns, and open to the roof, which was 80 feet above the floor.

The Philadelphia Rolling Mill Association met on Monday afternoon, and considered the ultimatum of the 1500 ironworkers employed in the rolling mills for the establishment of

#### THE WEEK.

R. M. T Hunter, of Virginia, formerly regarded as a Nestor in diplomacy, is now a poor old man, a collector of customs at a small port at the mouth of the Rappahan-

The loss by the burning of the Missouri Car and Foundry Co.'s works is estimated at not above \$80,000, which is much less than first reported.

A decree of foreclosure against the Howe Sewing Machine Co., of Bridgeport, was passed by Judge Beardley last week, to satisfy the amount of \$280,000, in the case of Wm. H. Rockwell and others.

A San Francisco paper, in an appeal to Congress for a subsidy for a steamship line between this port and the Australian colonies, prints what it terms a remarkable exhibit, showing that our Australian exports have increased in the two years ending December 31, 1885, from \$6,500,000 to \$11,500,000. The balance of trade in favor of the Uniten States increased in the same period from \$4,500,000 to \$9,000,000.

The United States steamer Alliance, after being nine months at Norfolk under repairs, was placed under steam last Friday, and a crack 14 inches long was discovered in her

Acting Secretary Fairchild, in a letter to Representative Breckenridge, of Kentucky, in regard to the estimated receipts and ex penditures for the next fiscal year, says that the amount of refunds to be paid under the Oberteuffer decision as to the duty on cartons is estimated at between \$4,000,000 and \$5,000,000. He says further that the item of \$4,000,000 specified in the book of estimates is for the ordinary and usual repayment to importers of excess of deposits upon ascertained duties or upon duties and other moneys paid under protest. Conse quently the estimated sum, he says, should be increased to about \$8,000,000 or \$9,000, ooo. He explains that the item of \$8,600,000 for debentures cannot be used for the payment of claims under the Oberteuffer decision or otherwise, except as drawbacks on imported material exported in the form of manufactures.

Sperry & Barnes' pork-packing house, in New Haven, was burned 16th inst., and the loss, including provisions and machinery, is estimated at \$300,000.

The city of Vancouver, British Columbia which suddenly sprang into existence at the Pacific terminus of the Canadian Pacific Railroad, was destroyed by fire 13th inst. It had a population of about 3000. The loss is estimated at \$1,000,000. Reconstruction has actively commenced.

One of the largest gas wells known was struck at Grapeville, Pa., last week. At a depth of 1125 feet the drill entered the gas vein or reservoir, when the upward rush from the well became almost irresistible, deafening the workmen with its shrieks. The tools, weighing 2500 pounds, were not blown out, but held suspended by the pressure beneath. At last accounts efforts were being made to introduce 4 inch iron casing to bring the gas in control.

Californians are troubled by a drep of cents to 71/2 cents per bushel for wheat vithin about a fortnight, which means a loss of \$1,800,000 on the new crop.

There is said to be money at Suez for the first parties who establish there the manufacture of I and 2 gallon tin cans for the Egyptian oil producers.

The imports into Paraguay last year are returned at \$1,448,100, and the exports at \$1,572,300, showing a balance in favor of that country of \$124,200.

The President approved the act authoriz ing the construction of a bridge across the Staten Island Sound, known as Arthur Kill, and to establish the same as a post road.

Mr. Frye's bill to promote the political American nations, as passed by the Senate, authorizes the President of the United States to invite, on behalf of the people of the United States, delegates from Mexico and Central and South America to meet in Washington, October 1, 1887, to meet delegates on the part of the United States, to consider such questions and recommend such measures as shall be to the mutual interest and common welfare of the American States. One hundred thousand dollars is appropriated for the incidental expenses of the conference. The delegates of the United States without compensation.

Among the bills signed by the Governor is that amending the law regarding imprisonment for debt. Hereafter six months is to be the limit of imprisonment on arrests in civil actions, and the operation of the law New York, and elsewhere who have been incarcerated beyond six months.

Jacob Reese, the metallurgist, who recently returned from Tennessee, in a conversation remarked: "Those Tennessee folks have the fuel-economy idea down rather fine

tilled from the wood is conducted into a Cavanagh, Sandford & Co., the Twenty- is about half finished.

and then passes into a condenser. About 2 gallons of tar and 4 gallons of wood alcohol are obtained from each cord of wood. There is also a considerable amount of pyroligneous acid obtained which now runs to waste. This could very readily be converted into vinegar at but little expense.'

The inaugural address of President Hall, of the New York Board of Fire Underregard to the fire-insurance business in this It appears that the insurance values have doubled within 20 years, but the aggregate net receipts from premiums have decreased in the same time from \$8,222,845 to \$5,887,577. The fire losses within the last five years, notwithstanding the increased cost of the Fire Department, were greater than in any previous five pears of which there is record. The shrinkage in net receipts from premiums, Mr. Hall says, is due considerable part to increased commissions to brokers. These range from 35 to 40 per cent. President Hall's position is that a premium rate which contemplates such exessive brokerage cannot be justified.

Memoranda kept by the United States afford a tolerably close estimate of the amount expended at this port by the foreign steamships. It is made the duty of the inspectors to provide extra equipments and improvements such as they may deem necessary, and in most cases it is probable, they insist, that repairs shall be made in this port and the materials be obtained here. It has even been said that they sometimes order a steamer into dry-dock when wholly unnecessary, but the amount thus dispersed appears to be very trifling compared with expenditures in olden times, when American ships gave a handsomely remunerative business to scores of sail-lofts and shipchandlery stores along the river front. During the year 1885 the inspectors examined 148 vessels, aggregating 334,043 tons. The number of boilers examined was visits made to the various steamers for the period named was 1072. The amount of disbursements for the year on account of repairs and equipments is estimated at \$300,-2000. For the present year to date the amount is put down at \$164,423.

Ex-Minister Benjamin, formerly at Te heran, evidently regards with distrust the a lamp and was destroyed. Loss, \$35,000. reported railway concessions to Mr. Winiton, who recently resigned that office. He says: "Privileges similar in substance to those recently reported to have been granted to the present United States minister in Persia were repeatedly effered to American capitalists through the medium of the writer, but a careful examination of the ground convinced me that it would be inexpedient to urge our capitalists to invest money in Persian railways at present, with the possible exception of local tramways. Aside from the vast outlay required, they were sure to be opposed by Russian intrigue unless operated in her interests, and opposed in turn by England if they did so co-operate with Russia. These conditions continue un-changed." Mr. Benjamin says the archives of the legation show that the number of eitizens of American descent resident in Persia averages over 70.

The New York sealers and inspectors of weights and measures are unusually active of late, having turned into the city treasury a considerable amount of fees collected, although until now the revenues from this source were apparently lost, if, in fact, the law was not practically dead.

The French flag was raised at the New Hebrides by a naval commander, apparently with the design of establishing French authority in the islands, but it was ordered down by the minister at the Tuileries. The Comoro Isles, which have just been formally ceded to France, will strengthen her hold in Madagascar waters, as they lie between the great island and Africa, in Mozambique Channel. Those of importance are four in number, and contain perhaps 70,000 people, progress and commercial prosperity of the with some manufactures and a very considerable cultivation of sugar, now an export.

The flint, bottle and window glass workers most important matters to come up are the fire-proof structure. wage question and some changes in the mode of working. It is thought that but little change is contemplated in the matter of wages.

A subterranean lake of salt water was struck at a depth of 2400 feet while boring are to be 24 in number, and are to serve for gas at Akron. Ohio. No bottom was reached after paying out 1000 feet of rope, the drill encountering no resistance

The Paterson Board of Trade have decided to establish a permanent board of arbitration for the settlement of questions between workers and employers in that city. releases all prisoners in Ludlow Street Jail, The proposition comes from Mr. Strange, one of the most prominent workers in silk, whose men went out not long ago at the beck of a walking delegate from the cigar manufacturers.

Recorder Smyth has just given a decision on the demurrer entered some days ago by now. They are making pig metal with by Gen. Roger A. Pryor in the case of engineer, to succeed D. D. McBean as mancharcoal as fuel. They burn the wood into George Lenhardt and 46 others, recently ager. The contractors are Brown, Howard charcoal in closed kilns, and the vapor dis- indicted for conducting a boycott against

receiving tank, where the tar is deposited, third street tailors. General Pryor entered the demurrer on the ground that the indictments did not read in accordance with the law as laid down in the Penal Code. The Recorder decides that the indictments are correct and that the men must be tried.

The Cuban sugar crop, now nearly finshed, will probably equal that of 1873, the largest ever made on the island. Exports already amount to 300,000 tons, and stocks writers, presents some interesting facts in at all the ports add up over 400,000 tons, which will be still further increased.

> A dispatch from Ottawa, Ont., states that the Dominion Government have commenced the organization of regular customs ports in the Northwest Terriotries, on a basis similar to that which exists in the Eastern Provinces.

> The Cape Cod ship canal, it is again stated, will be pushed through to completion, Fred. A. Lockwood, the contractor, having obtained the necessary funds in New York.

The Senate on Friday passed the Frye Mail Subsidy bill without debate. The bill allows 50 cents per mile traveled by American vessels in which the mails are trans steamship inspectors under the law of 1882 ported, and is substantially the same as the Senate amendment to the Post Office Appropriation bill, which is now in conference.

> Coffee boiled in copper-bottomed kettles in which water had been standing 20 hours sickened almost fatally a large number of men who participated in a military reunion at Reading, Pa., last week. The difficulty was first charged to corned beef, impregnated with imaginary tinner's solder.

Nova Scotia has voted overwhelmingly in favor of secession from the Dominion, although she favored the confederate scheme when it was adopted 19 years ago. The special election held last week was in pursuance of a resolution moved by the Premier in the last local legislature, recently dissolved, and out of 38 seats the repealers obtained 31. The question now is as to what 600, donkey boilers 147, and the number of the repealers will do with their victory. According to the tenor of advices just re ceived from England, the Imperial Government wholly disapproves the course of the Dominion touching the fisheries question.

> One of the great iron hydraulic dredges mployed by Benson & McNee on the Potomac flats caught fire from the explosion of

> The Stevens Institute of Technology, at Hoboken, on the 17th graduated 34 students. Salutatory address by Henry B. Everhart, the valedictory by C. Russell Collins. The subjects of the theses, written by graduates receiving the degree of mechanical engineer, varied from "The Manufacture of Sugar" to "Experiments in the Field of Electro-Motive Force of Armatures of Dynamo Electro Machines.

> Like ex-Minister Winston, at Teheran, Minister Childs, at Bankok, is anxious to be relieved of his official station.

> The new bridge of the Baltimore and Ohio Railroad Co. across the Susquehanna River at Havre-de Grace, Md., is asserted by the Havre de-Grace Republican to be the longest bridge in the United States, and, with one exception, the longest in the world. It is 6315 feet in length, and river spans alone cover 3920 feet.

> The repairs of the English steamer Eros, at Cramp's yard, cost \$50,000, and, as an American register is now permissible, several parties are said to have made overtures for her purchase. This manner of obtaining "free ships" is an encouragement to local industry.

> The Manual Training School in Philadelphia has 142 applicants for admission at the close of its first year. The examinations include forging, welding, tempering, soldering, brazing, molding, casting and the proper care and use of tools

A committee of the Real Estate Exchange reports that the old building known as the ister's office in the City Hall Park is in such a condition that valuable records, maps, &c., involving the titles of properties of enormous extent, are perishing from exposure, liable to be wholly destroyed by of this country and Canada will meet in fire at any moment, and recommend that imconvention during the next two weeks. The mediate steps be taken for the erection of a

> Representative King, of Louisiana, introduced in the House on Monday a bill appropriating \$11,000,000 for the construction of coast defenses, to consist of revolving steelturreted forts at the entrance to important harbors. The first appropriation is to be followed by yearly appropriations of \$8,000, 000 until the system of defense is perfected.

> The lowest bid for enlarging the Metropolitan Museum in Central Park amounts to \$345,685. As only \$325,000 has been appropriated, the contract has not been awarded, and the competition will probably be reopened.

The Catholic bishops of Quebec denounce the Knights of Labor

About 2000 laborers employed on the aqueduct between Croton Lake and Irvington struck on Monday in consequence of the appointment of J. A. Latcha, a civil & Co., and the work, which covers 13 miles,

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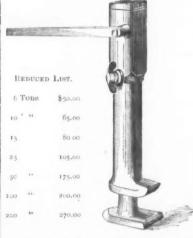
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Buffalo Korge Co., Hoffalo N. V.

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Grand Rapids Refrigerator Co., Grand 

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Clayton Jas., Brooklyn, N. Y., and New

Roller Bearings. Chapila Mfg. Co., Bridgeport, Conn... Roofing.
Globe Roofing and Paint Co., Cincinnat!.4 Rubber Goods. Hartford Rubber Works, Hartford, Ct.... 3 Kules, Manufacturers of. Stanley Rule & Level Co., 29 Chambers, N. Y.

Sad Irons. Enterprise Mfg. Co., Philadelphia...... 38 Fox Sad Iron Co., 78 Maiden Lane, N. V. 16 Safety Lamps. schmitz E. J., 202 E. 76th, N. Y...... Sap Spouts. Post C. C., Burlington, Vt... Sash Balances. Bugunin R. B., Hartford, Conn...

Sash Cords and Chains. Smith & Egge Miz. Co., Bridgeport.. Toiman J. P. & Co., Boston, Mass.... Saw Guards. Parry Web, Richmond, Ind...

Saws, Makers of. Atkins E. C. & Co., Indianapolis, Ind... Diamond Saw Co., Boston, Mass Union Saw Co., 337 Broadway, N. Y.... cales, Manufacturers of. Buffalo Scale Co., Buffalo, N. Y....... Chatillon John & Sons. 85-89 Cliff, N. Y.

creens, Window and Door. Screw Cutting Machinery. Wiley & Russell Mfg. Co., Greenfield, Screw Drivers. Eltrich Hdw. Mfg. Co., Plantsville, Conn. I: Graham J. H. & Co., 113 Chambers, N. Y.

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Newton & Snipman, 8s John, 8, 7, 8, 80 Pierson & Co., 24 to 27 West, N. Y. 4 Whitney a. H. & Co., 17 Broadway, N. Y. 4 Steel (Mushet's Special; Jones H. M. & Co., 11 & 13 Oliver, Boston, 36 Seel Manufacturers John, N. Y. 6 Burgeos Chas., Titusville, Pa. 13 Burgeos Steel and Iron Works, Fortsmouth, O. Chrome Steel Works, Brooklyn, E.D. N. Y. 37 Collins H. E. & Co., Pittsburgh, Pa. 36 Frankford Steel Co., Philadelphia, Pa. 6 Gautier Steel Department of Cambris, Iron Co., Johnstown, Pa. 3836 Hartman Steel Co., Pittsburgh, Pa. 9 Jessop Wm. & Soas, Sheffield, Eng., or John, N. Y. 36 Midvale Steel Co., Nicetown, Phila 6

aylor & Co., 50 John, N. 1. iymouth Rolling Mill Co., Consho hocken, Pa...... ortage Iron Co., Limited, Duncans-Pa lie Iron & Steel Co., Pottsville, Pa. 24 de Iron Works, Wheeling, W. Va., 24 d Wm. & Harve), Frankford,

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Garrison A. & Co., Phtsburgh, Pa..... Steel Rules.
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Upright Drills.

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Letter Steel Co., Pittsburgh, Pa. 12

Hartman Steel Co., Pittsburgh, Pa. 19

Pillips E. & Sons, South Hanover, Mass. 13

Plymouth Mills. Pilymouth, Mass. 32

Salem Wire Nail Co., Salem, O. 35

Salem Wire Nail Co., 58 Hudson, N. Y. 45 Salem Wire Nail Co., Salem, O., Whitney A. R. & Co., 58 Hudson, N. Y.
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Hazard Mg. Co., Wilkesbarre, Pa....
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Coes L. & Co., Worcester, Mass. 24

N. Y. Supply Co., 50 and 52 John, N. Y., 30

N. Y. Supply Co., 50 and 52 John, N. Y., 30 Philadelphia 44
Singer, Nimites & Co. Pittsburgh, Pa. 58
smith Bros. & Co. Pittsburgh, Pa. 58
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#### For Sale

BY STATES OR TERRITORIES.

Capable of riveting from No. 18 Wire to 1/4 inch Iron; will make any shaped head (flush or raised), and tight or loose joints.

For particulars, apply to

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CHEAP.

One 17 ft. bed, 30 in. Engine Lathe.
One 16 ft. "25 in. "
One 6 ft. bed, 18 in. Windser Lathe and Chuck
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One Profiling Machine,
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One 2 spindle Pratt & Whitney Drill.
One 4 "Garvin"

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Send for List of Second hand Tools.

New York Machinery Depot, Bridge Store No. 16, on Frankfort St..

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#### 4000 Cases

Swedes and American Tacks and Nails, On Tuesday and Wednesday, July 13th and 14th, at 10 o'clock a. m. each day,

At our Salesrooms, 12 Murray St. and 15 Park Place,

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This sale will be made on 60 days' time for approved paper, for bills of \$250 and over; under \$250, net cash. Further particulars in next issue of The Iron. Age.

## FOR SALE.

One Plain Cylinder Boiler, 30 ft. long, 30 in. diameter, with Steam Dome and Safety Valve, and the Castings necessary to set it up. all in good condition; one Horizontal Engine, plain slide valve, cylinder 8 in. diameter, 16 inches stroke, with flywheel and belt pulley; one Abbe Patent Bolt Forging Machine, used only a few weeks; two Chapin Bolt Heading Machine; one small Heading Machine; one small Heading Machine, adapted to head 7-16 and smaller rods; one small Knowles Steam Pump; one Three-Spindle Geared Nut Tapper, J. H. STERNBERGH, Reading, Pa.

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Suitable for Hardware Manufacturers' Agents First-class location. For further particulars, apply on premises, 104 Chambers Street, corner Church, New York,

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Office of The Iron Age, 66 and 68 Duane St., N. Y.

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A Chemist. One experienced in Blast-Furnace and Open-Hearth Steel Works preferred. To conduct laboratory work, &c.

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To Railroad Spike and Bolt Makers: The undersigned, inventor of a Spike, Bolt and Rivet Machine, now nearly ready for operation, wants capital to develop the said patent and place the machine on the market. Has been tried; makes the P. R. Kandard Roll Point Spike, and is the only machine that can be adapted to make Steel R. R. Spikes; none but parties meaning business need apply. Call on or address.

S. A. STANDIFORD.

Yeagertown, Mifflin Co., Pa., where the achine and product can be seen.

A large Screw Press, Arch pattern. Very power ful. Size Bed 17 x 20, Lever 12 ft.; Balls 12 fn. Everything complete. Been very little used. Will be sold cheap.

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Lots or acre property on river and railroad, conecting with the B. & O., Chicago & Atlantic, Chicago & E. Illinois, Chicago, R. I. & P., Chicago & W. Indiana, and Belt Line, Ill. Cent., L. S. & Mich. So., L., N. Albany & Chicago, Mich. Cent., N. Y., Chicago & St. Louis and P., Ft. W. & Chicago Railroads. Number of passenger trains to and from Chicago to South Chicago daily is about 75 each way.

Also Docks on Calumet River, with its splendid narbor at South Chicago, and the only river property connecting with the Belt Line, which also connects with every R. R. entering Chicago.

Towage One-Half Chicago Rates. Capital invested at this point alone, \$9,000,000.00 In buildings and plants, - - 4,100,000.00 Value of product last year, -9,000,000.00 Lumber received last year, - 105,000,000 Ft.

Among the many large establishments already located are the North Chicago Rolling Mill Co.'s Bessemer Steel Rail Mill, the Calumet Iron and Steel Co.'s Rolling Mill and Nail Manufactory, The Morden Frog and Crossing Works, Chicago Forge and Bolt Works, &c., &c.

MANUFACTURERS, or shippers of COAL, PIG IRON, IRON ORE LUMBER, ETC. also parties who wish to build GRAIN ELE-VATORS wi please correspond with us. Contractors for River and Harbor 1mg

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I am prepared to furnish

PLANS, SPECIFICATIONS and ESTIMATES

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SUPERINTEND THE CONSTRUCTION OF ROLL-ING MILLS AND MACHINERY, RE-GENERATIVE GAS FURNACES, TUBE AND PIPE MILLS, ETC., ETC.

I represent the latest improvements in all the above branches.

M. V. SMITH, Metallurgical Engineer Rooms 16, 17, and 18 Bissell Block. Pittsburgh, Pa.

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One Testing Machine, made by Riehlé Bros, Phila., for Plate, Bar Iron, &c., in good order. Apply to P. O. BOX No. 65, Baltimore, Md.

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Descriptive circular sent on application.

#### Bargains in Machinery.

One "10 x 24.
Three Hors. Tubular Boilers 80 H. P.
Three Hors. Tubular Boilers 80 H. P.
One Nos. 2, 3, 4 and 8 Knowler' Steam Fumps.
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D. B. CRUICKSHANK,
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A manufacturing concern, long and well established, desires to make a change from a small place with no railroad to some live town of 5000 or over. The line of goods is a very fine one, and sell to the Hardware Trade. About 100 of the best class of mechanics are employed, and the number can be largely increased. This is a rare chance for some good place to secure one of the finest branches of manufacturing. Correspondence is solicited, setting forth advantages, inducements, &c. "MANUFACTURER" Address
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PORTLAND, OREGON

## Dissolution of Co-Partnership.

The firm of Jackson & Tyler, Baltimore, have dissolved by limitation, June 25, 1886. The Machinery, Tool and Supply business will be continued by C. L. JACKSON & CO., as successors to JACKSON & TYLER, and have removed to No. 54 German Street, Baltimore, Md. Prices, lists and estimates furnished on Machinery, Engines and Supplies of all kinds.

A MAN carrying a Hardware Specialty and about to call on the Jobbing Trade only, throughout the West, South, &c., and who is very generally ac-ditional states of the second of the second of the Samples, on commission. II. P. P. 118. Address "L," Box 118, Office of The Iron Age, 66 and 68 Duane St., New York

WANTED, by a man of several years' experi-

wence, a position as Roller on either bar or guide mill. Good references. Address "AVIGNON,"

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## Sale of Valuable Iron Property.

Pursuant to a judgment of foreclosure and sale made by the New York Supreme Court, the works and other property of

## Peru Steel and Iron Company

will be sold at public auction, June 30th, 1886, at 10 o'clock a. m., at the Court House in the village of Plattsburgh, N. Y.

The property is situated in the counties The property is situated in the counties of Essex and Clinton, N. Y., and comprises over 21,000 acres of land well covered with wood for making charcoal. Upon the property are a large stone forge with 16 fires, ore separators, foundry, saw and grist mills, shops, store, dwellings, barns, dams and fixed machinery and appliances for making Charcoal Iron direct from the ore.

The property includes an undivided interest in the PALMER ORE MINE, which is provided with steam engine, air compressors, &c. The ore from this mine is used in making the celebrated "PERU" iron, which for conversion into cast steel is equalled by few irons in the world. There are also included mining rights in many thousand acres of land, upon which deposits of valuable minerals are known to exist.

For further detailed information, apply to FRANCIS J. DOMINICK, Receiver,

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#### Damaged Band and Rod Iron.

For sale low, or in exchange for Scrap Iron or Scrap Steel.

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SCRAP IRON, SCRAP STEEL AND METALS,

92 MANGIN STREET

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FOR SALE.—In Westmoreland County, Pa., on the Allegheny Valley R. R., 18 miles from Union Depot, Pittsburgh, in lots from 10 to 200 acres, having front ½ of a mile on Allegheny River on west, and same length of railway on the east; is level and mostly 20 feet above highest water, sidings at various points, can connect at grade. Ten foot vein of coal under the whole tract. Both the Philadelphia and the Hite Companies Gas Lines from Tarentum Region are respectively 200 and 100 yards from whole west front; Gas rises along all this front, and parties desiring to control their own fuel would do well to look at this item. Railroads centering at Pittsburgh have favorable rates for all points. Two large plate glass works and other industries using gas lie from ene to two miles above, on the Tarentum side. Descriptive circular sent on application to

We are prepared to furnish a few 36-inch planers of the most approved construction at very ow prices. Send for our circulars of

Pulley Lathe, Pulley Borer and Lathes.

from 26-inch to 72-inch swing.

NEWARK MACHINE TOOL WORKS,

NEWARK, N. J.

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A representative, on commission, to the retail trade of the Pacific Coast, for a large and fine line of goods going to the Fancy Hardware, Drug and Notion Trade. No objection to the line being handled in connection with other goods which do not confiliet. An excellent opportunity for a large and permanent business. Address, with references, &c. "PACIFIC,"

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A Mechanical Engineer and Draughtsman, compe ent practically and theoretically, desires an engage nent in works or draughting room. Address

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TO LET, WITH POWER, one or more floors of a two story and basement brick building, 162 x 55 feet situated within seven minutes of frelight depot and steamboat wharf. Address 'P. O. BOX L''

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FOR SALE AT VERY LOW PRICES—Several new Engine Lathes of 10 in., 18 in., 24 ib. and 28 in. swing, of late design, with great power and all modern improvements. For description and prices, address J. B. REED, Cairo, Ill. Office of The Iron Age, 66 and 68 Duane St., N. Y.

Second-hand Machinery in Good Order. For Sale Cheap, I Engine Lathe, 48 in. x 20 ft, bed. 1 4 5 in. x 18 ft. 1 4 1 28 in. x 15 ft. 1 4 1 1 4 1 1 1 24 ft.

Special Notices.

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22 in. x 12 in. x 20 in. and 24 ft
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22 in. x 13 ft. bed. Fifield
22 in. x 13 ft
120 in. x 8 and 10 ft. bed. Putnam.
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no Foot Presses, assorted.
8 Power "
12 Punching and Shearing Machines, assorted.
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12 Punching and Shearing Machines, assorted.
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1 Mogers' Wood Planer, 24 in. 3 5 in.

Williams.
1 Rogers' Wood Planer, 24 in. X 5 in.
Also full line of New Machiner;
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Foundry, 100 X 40 ft, and Machine Shop 60 X 20 ft., both with water privilege; also Japan and Packing House 62 x 22, Stove Storehouse 50 x 14 and Storehouse and Box Shop 30 x 20. All in good repair and running order; five minutes from steamboat and ten minutes from two railroad stations. Address

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6284 feet of 2½-inch Cold-Rolled Shafting 592 Hangers. 300 Counting

592 Hangers.
300 Couplings.
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All cold-rolled and in first-class condition, having been but little used at the late Exposition, at very low prices.
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#### FOR SALE.

2300 lbs. 9 in. x 3-16 in. Best Norway Iron. Will sell low. Lot left after flaishing a contract. Bars about 4 to 5 feet long.

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Wishing to be represented in Chicago by resident Agents, with permanent office and sample room and experienced traveler for the Western Terri

Manufacturers of Hardware, Iron, &c.,

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Address "RESIDENT AGENTS," Office of The Iron Age, 66 and 68 Duane St., N. Y.

#### Cash Advances Upon Iron.

DENNSYLVANIA WAREHOUSING AND SAFE DEPOSIT CO., Girard Building, 3d St., below Chestnut, Philadelphia. This Company is prepared to establish yards through out the iron regions at small cost, and to make ad-vances at moderate rates of interest.

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By an established firm, a practical Foundryman, with or without capital, capable of taking entire inside management of a shop making small cast

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Iron and Steel Scrap of all descriptions, such as Old Iron and Steel Wire Rope, Burnt and Mallea-ble Iron Rails, &c., &c. We have for sale Pig Iron, Merchant Bar Iron, Sheet Iron, Nails, &c. SITES, GILL & CO., 222 and 224 So. Third Street,

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#### Wanted.

A thoroughly competent Founder for large Modern Charcoal Furnace; must be fan iliar with Tennessee Ores. Address, with references, stating experience, age, and salary wanted, "COMPETENT FOUNDER,"

Office of The Iron Age, 66 and 68 Duane St., N. Y

A NALYSES as wanted in the various industries, A with especial regard to Iron, Copper, Glass, Lead, Ores, Coke (fold and Silver by assay); also analyses of Potable Water, Beer, Butter, also analyses of Fotable Water, Beer, Butter, Milk, Fats, Oils, organic matter in general, are promptly executed in the laboratory of the Pittsburgh College of Pharmacy, 77 4th Avenue, Pittsburgh, by Hugo Blanck, Pb. D. Daily instructions given in laboratory practice from 1 to 5 p. m., to students of chemistry.

HARDWARE Store for sale in Central West, having a well-established business and surrounding country unsurpassed. A bargain to the buyer. Address "WELLER,"
Office of The Iron Ags, 66 and 68 Duane St., N. Y.

WANTED a partner in a Hardware Store, with \$2000. Situated in one of the livest and growing towns in Virginia.
Address "OPPORTUNITY."

#### Special Notices.

MACHINERY, SECOND-HAND AND NEW, ON HAND.

Bridgeport. New.
Wheeler. Good.
New Haven. Good.
Pratt & Whitney. Good.
Thayer & H. Good.
Powell. New.
Ames. New.
Putnam. Good.
lers. Powell. New.
Pond. Nearly new.
Pod. Nearly new.
the. Harris. Good. Wood & Light. Good. Pond. Good. Ames. Good. Blaisdell. New. New Haven. A I. Belden. A I.

18 in. 19 ft. Bellen. A I.
18 in. 12 ft. Bellen. A I.
19 in. 12 ft. Wright & Smith.
19 in. x 10 ft. Engine Lathe.
20 in. x 10 ft. Engine Lathe. Bladsdell & Harris.
22 in. x 12 ft. Pond. Nearly new.
32 in. x 12 ft. Pond. Nearly new.
34 in. x 12 ft. Geared and S. F. Pond.
Nearly new. 29 in. x 12 ft. "Harrisburg. Fair.
32 in. x 10 ft. "Pond. Nearly new.
34 in. x 12 ft. "Pond. Nearly new.
34 in. x 12 ft. "Pond. Nearly new.
30 in. Upright Drill, Back Geared and S. F. Pond.
Nearly new.
20 in. Upright Drill, Bk. Geared and S. F. New Haven.
20 in. "Plain. Prentice.
12 in. stroke Sellers' Traveling Head Shaper.
12 in. Shaper. New Haven; A 1. 24 in. Hendey; A 1.
15 in. and 24 in. Shapers. Wolcott. New. 10, 15, 20
15 in. and 24 in. Shapers. Wolcott. New. 10, 15, 20
15 in. and 24 in. Shapers. Wolcott. New. 10, 15, 20
16 in. and 24 in. Shapers. Wolcott. New. 10, 15, 20
17 in. and 24 in. Shapers. Wolcott. New. 10, 15, 20
18 in. and 24 in. Shapers. No. 15 in. and 24 in. Shapers.
18 in. Pattern Milling Machine. New.
19 collars Milling Machine. New.
19 collars Milling Machine. A 1.
18 in. Nos. 2, 3½ and 4 Stiles Presses.
18 No. 3 Louble Crank Stiles Press.
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18 No. 4 Long & Alstatter 6-in. Punch Press.
18 in. Milling Squaring Shear. Foot Power. A 1.
18 in. Milling Squaring Shear. Foot Power. A 1.
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18 in. Wolf Stiles Press.
19 in. Wolf Stiles Press.
10 in. Wolf Stiles Press.
11 in. Milling Machine.
12 in. Wolf Stiles Press.
13 in. Wolf Stiles Press.
14 in. Wolf Stiles Press.
15 in. Wolf Stiles Press.
16 in. Wolf Stiles Press.
16 in. Wolf Stil

E. P. BULLARD,

14 Dey Street, N. Y. SCRAP IRON.

## We buy all kinds of Iron and Stee Scrap, Burnt Iron, Old Rails, &c., &c. Write us, naming quan

tity, price, &c. ROBINSON & ORR,

115 Water St., Pittsburgh, Pa.

### We buy and sell all descriptions of Iron and iteel Scrap. Correspondence solicited.

HOFFMAN, PARRY & CO.,

208 S. Fourth St., Philadelphia.

IRON AND STEEL SCRAP

Bought and Sold. JAMES H. LOGAN.

Pig Iron Commission Merchant.

#### 93 Fourth Ave., - PITTSBURGH, PA SCRAP IRON.

We buy all classes of Iron and Steel Scrap, Wrought Turnings, Cast Borings, Burnt Metal, &c. GEO. A. McLEAN & CO., Room 28, Lewis Block, P. O. Box 455,

Pittsburgh, Pa.

We buy and sell all classes of Iron and Stee

#### Scrap. Correspondence solicited. JOS. C. POULTERER & CO., 204 S. Third St., Philadelphia

## Cotton Gin Ribs.

HARDWARE MERCHANTS and others furnished with materials of all kinds for making and repairing COTTON GINS. RIBS and SAWS for repairing ALL makes of gins. Send for Price List. Address THE BROWN COT-TON GIN CO., Manufacturers of Cotton Gins, Feeders and Condensers. New London, Conn.

FOR SALE. PLANT FOR STEEL AND IRON FORGINGS
Steam Hammers, Engine, Boiler, &c.
ROOT BLOWERS, Nos. 1, 2, 4, 5 and 7.
STURTEVANT BLOWERS, Nos. 1, 2, 2, 4, 5, 6, 7, 8, 9
and 1c. Engines, Boilers, Pumps, Tanks, Rolls,
and General Machinery. Careful attention given
to purchasing for parties out of the city. Correspondence solicited. C. R. BIGELOW, M. E.,
45 Dey St., New York City

#### FOR SALE.

Three-Spindle Nut Tapper, Hoop Iron Testing Machine, Column Milling Machine, 16 in. x 8 ft. Lathe, Small Slotter, Ames Gear Cutter, two Bolt Cutters.

A. G. BROOKS, 261 North Third Street, - Philadelphia. Hoisting Engines and Elevators.

New 10 H.-P. worm-geared Hoisting Engines; Steam Cylinder 6 in. bore, 8 in. stroke; geared 16 to 1; Drum 20 in. Mameter, 18 in. long; im-proved Cone Friction for Hoisting and Lowering. Same style, double cylinders, 20 H.-P. Warehouse Elevarons. All attachments.

#### A. G. BROOKS, 261 N. Third Street, Phila. A Rare Chance.

General Hardware and Stove business at Barnesville, Minnesota, Division Headquarters of Saint Faul., Minnespolis and Manitoba system of ratiways; Car and Machine Shops located here; business sell worked up and profitable; Barnesville situated in good agricultural country, and well settled up. Satisfactory reasons given for selling. Address M. FRANKOVIZ, Fergus Falls, Minn.

## Basic and Bessemer Steel Ores.

We have many thousands of acres of the finest Basic and Bessemer Steel Ores for sale on lines of railroads, with limestone in abundance close by, and coal for coking not very distant; also manganese and many good farms. nanganese and many good farms.

MOON & RENICK. No. 11 Tenth St., Richmond, Va.

HARDWARE Travelers in United States and Canada may hear of a commission to sell the Patent New York Hasp Lock and Catch combined. NEW YORK HASP LOCK WORKS, 72 Reade Street, New York.

#### Special Notices.

## Second-hand Machinery for Sale.

Two Engine Lathes, 87 in. swing, 20 ft. 6 in. bed Geared in Face Plate, Screw Feed, Con pound Rest. One Engine Lathe, 15 in. x 6 ft.

One Cylinder Boring Lathe, 33 in x 10 ft. bed. One Planing Machine, 32 x 10 ft. Lathe & Morse make. Good order.

( ne Iron Planer, planes 24 ft. long, 62 in. x 62 in. Excellent condition.

One Iron Planer, planes 8 ft. long, 30 in. x 30 in Two Iron Planers, plane 6 ft. long, 24 in. wide. Three Iron Planers, plane 4 ft. long, 24 in x 24 in Three Iron Planers, plane 5 ft, long, 20 in. x 20 in. One Oliver Bros. & Phillips' Bolt Header.

One Four-Spindle Nut Tapper. One 1750-lb. Bement Steam Hammer. Excellent.

One Small Steam Hammer. One Dead Stroke Hammer. Good order.

One Hydraulic Wheel Press. One 25-inch stroke Shaping Machine.

One No. 3 Portable Drill.

One Steam Riveting Machine One 26-inch B. G. S. F. Upright Drill.

One Slotting Machine, 6-in. stroke. Bement's make. One Profiling Machine. One Axle Lathe, for car axles.

One Durrell 7 Spindle Nut Tapper. Send for lists New and Second-hand Tools, too long for publication.

Sole Agents EDISON SHAFTING MFG. CO. THE GEO. PLACE MACHINERY CO. 121 Chambers and 103 Reade Streets, NEW YORK,

## BARGAINS.

One 26 x 42 in. Hor Engine, Goodwin Cut-off.

ne 5 H.P. on wheels.

Tayne Vertical.

ne 14-in. Steam Cylinder Worthington Duplex
Pump.

Write and say what you want I have a large

stock, constantly changing.

## HENRY I. SNELL

The largest and most reliable stock of Engine and Boilers in America. All sizes and styles, and all made of the very best material at lower prices than common, cheap country-made work can be lected 5/ better, viz., £40. 5/@ £40. 15/. sold. These Engines are all made interchangeable oy special machinery. Agents wanted, and orders from the Trade solicited.

Write for Illustrated Catalogue and particulars H. M. SCIPLE.

107 and 109 N. Third St., Philadelphia, Pa.

FOR SALE. Large lot second-hand Iron Tanks, from 5000 gals, down; all sizes and shapes.

About 625 ft. 4-in. Wrought-Iron Tubes with threads cut in them; good as new.

Lot new 100 gal. Oil Tanks with pumps; all complete.

Lot second-hand Engines and Boilers.
Lot new Mule and Horse Shoes, Wrought and
Cast Scrap, Red and Yellow Brass.
BUSSENIUS, CUNLIFFE & CO.,
Dealers in Scrap Iron and Old Metals.
12th and Washington ave., Philadelphia.

## FOR SALE.

A nearly new four-ton Steam Hammer, in first-class condition Made by the Morgan & Williams Engineering Co. of Alliance, Ohio. Very best manufacture. Address WORCESTER STEEL WORKS. Worcester, Mass.

### SHEAR FOR SALE.

A fine Power Shear, "Alligator" style, geared; will cut flat bar iron 6 x ½, 2 x ¾ and 1½ round. Weight 3000 lbs. Used only a few weeks, and warranted good as new in every respect. (Cost new in April, \$200.) Price \$200. Peerless Punch and Shear Co., SZ Liberty St., New York.

STEAM PUMPS.

Special sale of second hand, in perfect order, viz:
No. 3 Knowies, 7 in. steam. 4 in. water 10 in. stroke,
3 in. suction; price \$125. No. 1 Knowies, 39, in. x 2 in.
x 5 in. ditto, 14 in. suction; \$40. INO. 6 Cameron, 7 in.
x 39, in. x 10 in. ditto, 24 in. suction; 1100. Worth
ington Duplex. 14 in. x 29, in. x 4 in.; \$60. Columbus, 7 in. x 34; in. x 8 in. 24 in. suction; \$70.
And many others. New Pumps, best in use without
exception. All sizes on haulid all kinds of Pumps, or
bus, sell, excludes on haulid all kinds of Pumps, or
bus, sell, excludes Gear on old pumps and warrant
satisfaction. Write to MERHOAN TOOL CO.
Cleveland, 0.

A ROLLING Mill Superintendent or Manager possessing a thorough knowledge of the Open-Hearth Steel process will shortly be oben for an engagement; has a practical knowledge of the open-Hearth descriptions of Steel, viz.: Bails, Flates, Rounds, Squares, Spring, Tire. Toe-Calk and all Guide and Merchant Mill sizes; Fine Sheets for Stamping and Galvanizing purposes, &c., also a practical knowledge of Puddling and the Finishing of all classes of iron; a thorough knowledge of Iron and Steel Forgings. Address.

Office of The Iron Age, 77 4th Avenue, Pittsburgh, Pa.

#### WANTED.

A position as practical Chemist. Graduate of the University of Pennsylvania. W. SCHMOELE WOLFE, B S. P.C. 3435 Walnut St., Philadelphia.

#### WANTED.

Party representing and traveling through the West for other interests wants also to represent a firm manufacturing Common Stove-Pipe Iron. Must be a good grade of cheap Iron; no other Iron wanted. A No 1 references. Address "B. V.," Chicago Journal of Commerce.

FOR SALE.—An old and well-established Hard. Rosales And House-Furnishing Goods business, established in 1851. Address Estate of W. J. SWITS, Schenectady, N. Y

#### NOTICE.

# Trade Report.

#### British Iron and Metal Markets.

[Special Cable Dispatch to The Iron Age.] LONDON, WEDNESDAY, June 23, 1886.

Scotch Pig.-The market is irregular, with slight changes in quotations, affecting six of the nine brands on our list, as follows Glengarnock, "Ardrossan... Eglinton, "Shotts, at Leith

Carriage from Ardrossan to Glasgow is 1/ 2 ton. Cleveland Pig.-There is no change to report in this market, and we continue last week's quotations, f.o.b. shipping ports, as follows :

Bessemer Pig-We still have to report an unchanged market in Bessemer Pig, with prices same as last week, viz. : W. C. Hematites, 42/ for mixed lots, Nos. 1, 2 and 3, equal portions, f.o.b. shipping ports.

Manufactured Iron.-Market remains in the same condition noted last week-irregular, but without quotable change.

Staff. Ord. Marked Bars....
Medium Common Common Common Common Common Best.... 6 15 0 @ ..... 6 0 0 @ 6 10 5 5 0 @ 5 15 Common Best.. Medium .....

Steel Rails.—The market continues steady, but we cannot make any change in quotations, viz.: £3. 7/6 @ £3. 10/, f.o.b. shipping ports.

Old Rails. - The Old Rail, like the Scrap, market presents no features of interest. Prices remain the same as quoted for some time past, viz.: Old D. H.'s, c.i.f. New

Scrap.—The market is without change in any particular, and we continue the quotations given in this report for several weeks, as follows: Heavy Wrought, 50,'; Bessemer Crop Ends, run of mill, 54/@ 56/, c.i.f. New York.

Copper.-The market is a little steadier, and may be quoted for Chili Bars 10/@15/ higher, viz., £40. 5/@ £40 15/. Best Se-

Tin .- The market broke during the week, but is now a little steadier. We revise quotations as follows: Straits Tin, spot, £99. 15/ @ £100. 5/, and futures £100. 15/ @ £101. 5/.

Tin Plates .- There is a steady market, with a slight improvement in Coke seconds. 

Spelter.-The market shows no change from last week, and quotations remain the same, viz.: Ordinary at shipping ports, £14@ £14. 5/.

Lead .- Nothing new to report in this market. Prices are still quoted for Common English Pig, £13. 5/@ £13. 15/.

Freights.-Steam from Glasgow to New York, 5/.

#### Financial.

Office of The Iron Age, WEDNESDAY EVENING, June 23, 1866, The revival of the tariff question in Con-

gress is to be deprecated as a disturbing influence. On the other hand the agreement of ironworkers on a scale, as announced from Pittsburgh, stability in a trade identified with all leading industries, and the labor interest at large as represented by prominent organizations is more tractable. The failure of violence as a factor in business relations conveys salutary lessons. Most assuring of all is the promise of abundant crops, all meteorological conditions thus far being auspicious. The hopeful feeling in the West and Northwest is manifest. In the Eastern States, according to the Boston Commercial and Shipping List, "the general outlook is as promising as ever, and there is every reason to expect a good fall trade. A large quantity of manufactured wares has already been contracted for, and our leading industries have fair prospect of working their way out of the depression. One of the healthiest signs is the absence of large accumulations in any department. The conservative policy pursued during the past eight or twelve months has kept production down, and stocks of manufactured goods are now much smaller than they have been the surplus go when India gets full ! What in the trade, London remaining unaltered at for several years. With the consumptive capacity of the country steadily increasing, and the crops promising a bountiful yield, there is not much food for the croaker to fore the rupee loses the whole of its fictitious feed upon."

The stock market was active and strong until reaction set in near the close, the re- are without significance. sult of selling by the bull pools, but to-day Large Buyers of Shafting are requested to send pecification for special prices.

MERWIN McKAIG,
Cumberland, Md.

There was recovery. On Indicately, but some coordinately to below those of the previous week, considering the aggre-

of the year. On Friday a sharp rise in gate since January I \$200,619,277, as New York Central was based on improved against \$180,642,467 for the same time in earnings and the whole market was higher. 1885, and \$216,134,090 in 1884. On Saturday the tendency of prices was The exports from this port were \$1,368, Lake Shore, 851/2; New York Central, wheat, 390,099 bushels corn, 11,883 bales 1061/2; St. Paul, 937/8; Union Pacific, 571/8; Western Union, 65; Wabash, 1978; preferred, 3114; Lackawanna, 1311/2; Erie, 28 1/8; Jersey Central, 54 1/8; Reading, 26 1/8; Consolidated Gas, 78; Kansas and Texas, 30%; Louisville, 42; Chattanooga, 51¼; Northwestern, 115¾; Oregon and Transcontinental, 341/4.

United States bonds closed as follows:

Asked. S. 5 per cents 8. 4/5s, 1891, coupon. S. 4s, 1907, coupon. S. Currency 6s, 1895. S. Currency 6s, 1896. S. Currency 6s, 1897. S. Currency 6s, 1898. S. Currency 6s, 1898. The rate for 60 day sterling bills was ad-

owing to the scarcity of commercial bills, and \$860 were engaged for export. The reported business failures this week include that of H. H. Swift & Co., of this

vanced 1/2 t on the pound this morning,

city, importers of Brazilian sugar, with liabilities of about \$1,000,000, but they hope to resume in a few days. The Cotton Exchange voted to close on

Saturday, July 3, as well as on Monday, the

In the New York general market the course of business has been quiet, with little change 7 0 0 % 7 10 0 in values Wheat, though at times excited, 5 10 0 % 6 % 5 0 tends downward, and buying for export is tends downward, and buying for export is liberal. Corn is irregular. Cotton slightly declined. Dry-goods jobbers report a decidedly favorable change, with more buyers in the market and prices very firm on the present basis. In wool there is much greater interest in consequence of developments at the recent sales in London. In Boston the advance in the finer grades is 3¢ @ 5¢ P lb. All signs point to a good autumn trade.

> The bank clearances last week at 30 principal cities showed a gain of 34.9 % compared with the corresponding week last year, every point, with two exceptions, indicating an improvement After Omaha New York heads the list with a gain of 60%, and Boston is sixth, with 32 %. The Acting Secretary of the Treasury on Saturday issued the 138th call for the redemption of bonds. The call is for \$4,000,000 of the 3 % loan of 1882, and notice is given that the principal and accrued interest will be paid at the and that the interest will cease on that day. The weekly statement of the Associated Banks shows an increased surplus reserve. which now stands at \$15,711,425 against \$62,540,500 at the same time last year, and \$10,020,075 at the corresponding date in 1884. The loans show a gain of \$3,804,800. The flow of currency is still toward this center from interior points. The local money market is unchanged. The current rates on call average about 2 %; three months paper, 31/4 % @ 4 %; four months, 31/4 % @ 41/2 %. In the West there is rather more inquiry, prompted by the nearness of the wheat harvest, also to make advances on cotton and wool. Bank loans in St. Louis and Chicago are well up to the average. July bank dividends thus far announced are: Bowery, 5 %; Commerce, 4 %; East River, 4 %; Hanover, 31/2 %; Irving, 4 %; Merchants' Exchange, 3 %; People's, 5 %; Seventh Ward, 3 %; Madison Square, 3 %. The \$2,000,000 New York City new water stock has been awarded to Vermilye & Co. and Blake Brothers on a joint bid of \$105.03. There were 18 bids, aggregating about \$14,000,000.

Silver continued to touch lower quotations than any previously recorded, reducing the value of the standard silver dollar to 75.65¢.

The difficulty in Indian exchange experienced by British bankers was explained in Parliament as arising from the rupee falling in value from 2/ to 1/6., requiring 25 \( \) more rupees to make payments than formerly. The Chronicle, in an article on silver, has the following table of imports of silver into India for three years, prepared by the Department of Finance and Commerce of India, and stated in pounds sterling, 10 rupees to the pound:

| Silver-India. | 1843. | 1845. | 1846. | 1845. | 1846. | 1845. | 1846. | 1845. | 1846. | 1845. | 1846. | 1845. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. | 1846. value of the standard silver dollar to 75.65¢.

Net impt's 12 mos. £6,405,151 £7,245,681 £11,605,628 "These figures, show," says the Chronicle a net of over £11,500,000 of silver received by India during the last fiscal year, against £7,250,000 the previous year, and less than £6,500,000 in 1883-84; whereas her merchandise exports (domestic and foreign) for the same years show no We quote Bertha Refined 8¢. Sheet Zinc .increase when compared with the previous year, and a considerable loss compared with two years ago. How long can India make room for this flood of silver! Where will would be the effect on price if India, too, should join in discrediting the metal? How long under the present process can it be bevalue, and, when that day comes, what next?" Gold shipments from New York

The imports of merchandise at the port realize caused much irregularity, but some coo below those of the previous week, the

still upward, but on Monday there was a 727 below those of the previous week, the heavy selling movement which brought total valuation being \$5,709,618; total since down the list. On Tuesday the tendency January 1, \$144,839,094, as compared with was still downward, but to-day the bulls \$160,000,000 in 1885 and \$146,000,000 in were again in control. Latest quotations: 1884. The items comprise 771,964 bushels cotton, 8,787,638 gallons petroleum, 4,685, 771 h cut meats and 3,032,302 h lard.

According to the Custom-House reports the imports of specie at this port during the week were \$19 507, and the exports \$1,349,330, making the totals since January I, respectively, \$3,755,862 and \$36,595,361, as compared with \$6,000,000 and \$14,000, 000 in 1885.

The British Board of Trade returns for May are not regarded so satisfactory as those of the previous two months. The imports amounted to £29,023,000, a decrease of £2,165,000, or about 7 %, and the exports to £10,301,000, a decrease of £844,000, or about 5 %. The diminition in the imports is very general, the only important exception being cotton, which shows an increase. The falling off in the arrivals of wheat is considerable, in spite of a large increase in the imports from the United States. There is also a decrease in wheat flour. Petroleum shows a very large increase in quantity, but a de crease in value. The increase in the ship ments of cotton piece goods to India has continued, the quantity sent to Bombay being more than double what it was in May, 1885 The exports of copper show a falling off, and, though there is a small increase in the quantity of iron and steel shipped, the value of this item was less than that for May last year.

#### Metal Market.

Copper.—There is a slight improvement since we last reported, but not yet well defined, except so far as futures are concerned, for which there is some demand, September and October delivery up to the end of the year, for which the range is 10.121/2¢ @ 10.15¢, without leading to much business so far, while for spot Lake 101/8¢ @ 10.20¢ is asked and 9.95¢ @ 10¢ bid. Other brands are 9.50¢ @ 9.7¢. In the London market Chili Bars fluctuated as follows: June 17 and 19, £39, 12/6; June 18, 21 and 22, £39. 15/, and this morning, £40. 15/, Best Selected remaining unaltered at £44. Our London cablegram this after-

futures, freely paid in London. Our own market, of course, followed suit, and a large business was done till Friday, both spot and to arrive selling at 22.90¢ @ 1.23.25¢. We estimate the quantity turned over at fully 250 tons; but since Saturday. Treasury of the United States, in the city of Washington, D. C., on August 1, 1886, large business was done till Friday, both over at fully 250 tons; but since Saturday a reaction set in from London under a heavy pressure to realize profits, sending down prices in that quarter to £99. 15/, spot, and £100. 10/, futures. Some of our weak holders precipitated themselves at that juncture on the market here, and sold gradually down from 22¾¢ London.

10 22¼¢, spot and July delivery, the spot quotation being at the close 22¼¢ Mach'y, pkgs. 3 50 Ag.imp., sold gradually down from 223/¢ secure that which does not exist. We hear Antim'y, bbl.. from London that the market is steadier.

Tin Plates—Have been steady, with a good business doing at ensuing quotations for ordinary brands, large lines, per box: Charcoal Bright, \$4.75 @ \$5.50; do. Ternes, \$4.35

British Australia.

Newfoundana.

Mf. iron, pkgs 4

Ag. imp.,pkg 1 13

Hdw., pkg 1 150

Sew. ma., cas 1 50

Sew. ma., cas 1 50

Sew. ma., cas 1 50

British Australia.

Hdw., pkgs. 862 14,358

Spelter and Zinc. - A moderate business has been done at \$4.40 @ \$4.62 1/2, Common Hdw., pkgs... 14 Iron, pkgs... 5 Nails, kegs... 12 Hdw., pkgs... 1 Mf. iron, pkgs 11 Sewing mach. 1 Domestic, Silesian being worth 4 1/4 ¢, nominally. From late accounts the further 5 % European reduction of output to date from the Provinces is not yet universally subscribed to. London quotes Silesian £13. 1/6. The market is firmer at \$5.50 @ \$5.70. Domestic, with certain sizes, is held higher.

Antimony.-We quote Cookson 83/ @ @ 9¢, and Hallett at 8½¢, with some duliness Clocks, cs..... 9 100 Hdw., cs. £33 for Hallett.

#### New York Metal Exchange.

The following sales are reported to have taken place on the floor of the Metal Ex-

0	tons	Tin.	July.														٠		٥								22,1
5	tons	Tin.	June		٠													٠									16/64
5	tons	Tin.	spot.																								250.
5	tons	Tin.	spot.			0		۰	0					۰		0	0					٠					22,
5	tons	Tin,	July.		0	0	۰	۰				0	۰		0	۰	0					0	0	0	×	*	22.
0	tons	Tip.	spot.																	r	٥		0	ę		٠	100.1

5 tons Tin, spot	22.904
5 tons Tin, June	22,900
THURSDAY, June 17.	
	23.054
5 tons Tin. spot	23.054
	23.100
5 tons Tin, June	23,000
	23,05¢
	40,009
FRIDAY, June 18.	
5 tons Tin, spot.	23.15¢
	23.15¢
Monday, June 19,	
10 tors Tin, July	22,95¢
5 tons Tin, spot	22,90¢
5 tons Tin, June	22,80¢
15 tons Tin, July	22.75¢
Tuesday, June 22.	
5 tons Tin, July.	99.506
5 tons Tin, June	22.500
	22,50¢
5 tons Tin, spot.	22.25¢
10 tons Tin, July	22.25¢
The same and transfer asserts transfer as	an, any

#### Exports.

The following list embraces the Exports of Hardware, Machinery, Iron, Metals, &c.,

from the port of Ne ending June 22, 1886	w York, for the week
Dutch         West         Indies           Quan.         Val           Y. m. sheath,         1         \$6           Hdw., cs.         3         1           Pumps, pkgs.         2         2	Nails, pkgs. 8 86 Saws, cs. 7 307 Tin, pkgs. 10 219 Wire gds, cs. 2 70
### Bremen.  Ag.imp.,pkgs. 167 1,42  Hdw.,pkgs. 6 5  Cutlery, case. 1 6  Mach'y,pkgs. 5 19  S. rollers, cs. 7 10  Ironware, cs. 2 3  **Christiania**	1 Mr. fron, pkge 1 50 Hdw., cs. 23 454 Platinum, bx. 1 2,000 7 Clocks, cs. 10 200 Copper, cks. 192 24,000 Guns, cs. 2 231
Hdw., cs 10 140  Hamburg. Mach'y, pkgs. 11 1,21  Firearms. cs. 10 1,20	Ag. imp.,pkgs 6 56  Mexico.

Tacks, cs.
Blowers.
Nails, kegs.
Clocks, cs.
Sew. ma., os.
Ag. imp., pkgs
Valves, bxs.
Hdw., cs.
Granite ware,
cs. Firearms, cs.
Clocks, cs.
Hdw. pkgs.
Ag.imp., pkgs.
Sew. ma., cs.,
Spikes, kegs.
Iron, pkgs.
W. closefs, cs.
Tacks, cs.
Tinware, cs.
Cuttery, cs.
Pumps, pkgs.
Nails, kegs.
Nails, kegs. 2 78 8 75 60 250 9 400 Saws, cs.... Nails, cs.... Tinware, cs... Mf. iron, pkge Brazil. Amsterdam.

Cartridges, cs. Hdw., pkgs... Tacks, cs... Irons, cs... Cutlery, cs... Tinware, case 141 203 331 Ag.imp.,pkgs. 5 Hdw., pkgs. 18 Clocks, cs. . . 22 Rotterdam, Guns case . . . 1
Ag.imp.,pkge 1
Nails, kegs . . . 110
Sew. ma., cs. . 2
China. Hdw., cs..... 25 Ag. imp.,pkgs 5 Liverpool. Ag.imp.,pkgs. 44 2,018 Revolvers, cse 1 938 Copper matte, sks.....2620 15,310 Sew. ma., cs. 24 Mf. iron, pkgs 798 Clocks, pkgs. 255 Hdw., pkgs. 16 Mach'y, pkge. 1 Nails, kegs. 100

Japan. Hdw., cs.... 87 3,111 Pumps, pkgs. 8 350 Mf. iron, pkgs. 5 81 Clocks, pkgs. 232 5,185 United States of

Colombia,
Metal g'ds, cs 6 1,650
Shoe nails, cs. 3 27
Mule shoes,
kegs...... 10 47
Clocks, cs..... 12 227
L. pipe, pige. 1 25
Tinware, cs.... 25 330
Cartridges, cs. 28 575
Shot, pkgs..... 6 35
Loco. matt.,
pkgs...... 4 142 Glasgow. 

Newfoundland. Mf. iron, pkgs 48 Iron safes.... 2 Argentine Republie

Argentine Republic,
Revolvers, cse 1 567
Ag.iup., pkgs. 3063 66,579
Mf. iron, pkgs 234 3,030
Mach'y, pkgs. 34 3,456
Tacks, cs. ... 80 644
Nails, kegs. 165 455
Iron, cs. ... 45 692
Cutlery, cs. 38 618
Clocks, cs. ... 60 1,765
Wash. machs. 16 335
Wringers, cse 1 40
Hdw., pkgs. 859 12,609
Pumps, pkgs. 78 625
Sew. ma., cs. 171 5,824 Uruguay. Cutlery, cs.... 12 Ag. imp. pkgs 13

Clocks, cs. 110 3,892 Pumps, pkgs. 49 2,235 8. rollers, cs. 41 825 Tacks, cs. 19 284 Cartridges, cs. 2 76 Nails, kegs. 103 288 Iron safe. 1 100 Mach'y, pkgs. 11 1,077 Hong Kong. Clocks, cs. . . . 85 Hdw., case . . . 1 British West Indies. Mach'y, pkge. Pumps, pkge. 1 Nails, kegs... 18 Oporto. Pumps, pkgs. 2 140 Leghorn. Mach'y, pkge. 1 Rifles, cs.... 4 British Honduras. Smyrna. British Guiana.

French West Indies 2 166 Tinware, case 1 : Central America. Mf. iron, pkgs 58 Revolvers,

Cuba. Mf. iron, pkgs 950 5,892 Revolvers,
255 case. 1
256 case. 1
26 sew ma. cs. 2
88 Nails, kegs. 18
17
125 Hayti.
1,897 Iron, pkgs. 7
272 Nails, kegs. 9
278 Mach'y, pkgs. 108
182 Hdw. cs. 3
924 Mr. Iron, pkgs 6 Cutlery, cs.... Nails, kegs.... Spikes, kegs... Sew ma., cs... Br. shells, cse Br. shells, ese 1 Tinware, es. 6 Nails, kegs. 45 Hdw., es. 105 Nails, es. 3 Clocks, pkgs. 18 Pumps, pkgs. 18 Mach y, pkgs. 4 Ag. imp.,pkgs 17

Nails, kegs... 15

Naples.

# Trade Report.

#### New York.

American Pig-The market has been quiet, with very little current business doing on standard brands, and the majority of sellers expect to do little for the balance of the current month. No. 1 Foundry continues in restricted supply, and it is likely that, as usual in the summer months, the proportion made will be less than the aver-We hear of a number of sales of round lots of Southern Iron for fall delivery at different points throughout the State and New England. We quote for standard brands, tidewater delivery, \$18 @ \$18.50 for No. 1 X Foundry, \$17 @ \$17.50 for No. 2 X within the next 30 days will have cause to congratulate themselves before the season is with the market in buyers' favor. Outside brands are 50¢ below these quotations.

Scotch Pig. - There is absolutely nothing that is new to report. We quote nominally as follows for small lots: Coltness, \$19.75 @ \$20 to arrive; Gartsherrie, \$19 @ \$19.25 to run the majority are right. As an encourarrive: Shotts and Langloan, \$19.50 @ \$20 to arrive; Carnbroe and Glengarnock, \$18.50 @ \$19 to arrive; Summerlee, \$19.50 @ \$19.75 to arrive; Dalmellington \$18.50 @ \$18.75 to arrive; Eglinton, \$17.50 @ \$18 to arrive, and Clyde, \$18 @ \$18.50 to arrive.

Bessemer Pig.-The market is very dull and quiet, both for Foreign, which is too high for business, at \$18.75 @ \$19 for Ordi nary Bessemer, and for Domestic, which is quoted \$18 @ \$18.50 at furnace.

Spiegeleisen.-Not a single transaction is reported. We quote nominally 20 % English \$25.25 @ \$25.50.

Bar Iron .- A slightly better feeling is reported, which evidences itself in greater promptness in purchasing as soon as tempting concessions are made. The difference between the men and the employers in the Philadelphia mills are being discussed. and it is expected that some decision will be formulated this week. We continue to quote for delivery here in round lots: Common Iron, 1.65¢ @ 1.70¢; Medium, 1.70¢ @ 1.75¢, and Refined Iron, 1.75¢ @ 1.9¢. Store prices are 1.75¢ @ 1.80\$ for Common, 1.85\$ @ 1.90\$ for Medium, and 1.9# @ 2.2# for Refined.

Structural Iron and Steel .- There is a little better feeling, a number of large contracts for new buildings being expected to come up at an early date. Among them is that of the Adams Express Co. We quote for Angles 2¢ @ 2.10¢, delivered, and Tees at 2.40¢ @ 2.45¢, for round lots. Steel Angles are quoted 2.35¢ @ 2.45¢, according to quality. Store quotations remain 2.25¢ @ 2.4¢ for Angles, and 2.6¢ @ 2.7¢ for Tees. American Beams and Channels are nominally 3¢ base from dock for all

Plates.—The market is quiet. We quote for round lots: Common or Tank, 2.12 1/2 # @ 2.20¢; Refined, 21/4¢ @ 21/4¢; Shell, 2.4¢ @ 21/2#; Flange, 3.4# @ 31/2#; Extra Flange, 4¢ @ 4¼¢. For small lots of Steel Plates the quotations are as follows: Tank, 2.70¢ @ 2.75¢; Ship, 3¢; Shell, 3¼¢; Flange, 3½¢, and Fire-Box, 4¢ @ 4½¢, on dock.

Merchant Steel .- We quote nominally for the range from ordinary to good grades as follows: American Tool Steels, 71/2 @ 9¢; Tool Steel of special grades and finer qualities, 12¢ @ 20¢; English Tool, 13¢ @ 15 1/4; common grades, 7¢ @ 9¢; Crucible Machinery, 4.5¢ @ 6¢; Round and Flat Spring, 2.4¢ @ 2.6¢; Round-Edge Tire, 2.4¢ @ 2.6¢; Square-Edge Tire, 2.75¢ @ 2.9¢; Toe Calk, 2.7¢; Sleigh Shoe, 2.6¢ @ 2.8¢ Open-Hearth Machinery, 2.5¢ @ 2.8¢, and essemer Machinery, 2.25¢ @ 2.5¢, with freight allowance

Steel Wire Rods .- Only a small current business is being done, contracts for full delivery not having been placed as yet. We quote \$38 @ \$39 for Ordinary Rods. Foreign Rod Billets, 4 x 4 inches, are nominally

Steel Rails.-We are reported sales aggregating about 9000 tons during the week Not a single Eastern mill can make deliveries in July and August, and those who must have Rails in that time may be forced to go abroad. There is considerable inquiry for fall and winter work, for which we quote \$34 @ \$35 at Eastern mills. Foreign Rails are quoted \$37 @ \$37.50 at tidewater. There are rumors of sales, which, however, we cannot trace to any reliable source.

Old Rails.-We hear of a sale of 500 tons at a point in Eastern Pennsylvania. In this market there are only few lots available, both Foreign in store and American Old Rails being held above buyers' views. We quote, nominally, \$18.50 @ \$19. There are some indications of speculative inquiry.

Old Wheels.-There has been some busi ness. We quote \$15 @ \$16, the latter for

Scrap.-The market is very dull. We quote \$18 @ \$18.50 from yard for No. 1 Wrought.

Rail Fastenings.—There is considerable activity in Spikes, and for particularly desirable business prices are shaded. quote 2.40¢, delivered, for Spikes, and 1.80¢ with so little demand and so much cutting vania Steel Co., of Steelton, Pa.

#### Philadelphia.

Office of The Iron Age, 220 South Fourth St., PHILADELPHIA, June 22, 1886.

Pig Iron.-There is very little disposition to do business, and, although the general tone shows improvement, it does not manifest itself to any extent in Pig Iron. The shutting down of many of the mills for a more or less extended period during next month has a tendency to check the demand, and needy sellers are already beginning to show anxiety in regard to deliveries in the near future. The leading companies are in a perfectly easy condition, however, and have really more trouble to supply the demand than to find buyers. Under these conditions the best informed men in the trade are of opinion that June and July will and 3¢ for Beams and Channels show the lowest prices of the year, and that those who can get the right kind of Iron ongratulate themselves before the season is pressed opinions of many leading houses, and, while we find it difficult to satisfy a very close inquiry as to the why and where fore, it generally happens that in the long aging feature it may be said that many of the leading manufacturing establishments report a better inquiry and very fair additions to their order-books, and it may be taken for granted that business during the last half of the year will be very much better than the first half has been. The danger most to be spprehended is in the enormously large production, and, although good Irons are taken as quickly as they can be turned out, it remains to be seen what the effect of a largely decreased consumption will be during the next few weeks. In the meantime the market holds its own very fairly. Some brands are weak and "draggy," others are steady and rather scarce, although of one kind or another there is more Iron offered than can be disposed of, a feature which will probably become more pronounced in the near future. Comparing the position with what it was a week ago we should say that the feeling is better on good Irons, but there is no improvement in demand, and as regards inferior grades they are not only dull, but a shade lower, with absolutely no inquiry for large lots. Prices vary according to delivery, &c, there being no fixed prices except in a few special brands; others are subject to such terms as can be mutually agreed upon. No. 1 Foundry, tidewater delivery, may be quoted at from \$18.25 to \$19 for standard, and \$19.50 to \$20 for choice. Southern No. 1, ex ship, \$17 @ \$18.50, according to brand. Gray Forge at tide, \$16 @ \$16.50 for standard Pennsylvania and Virginia Irons, and \$17.75 @ \$18 for choice brands. Southern, ex ship, \$15 @ \$15 50, according to brand. No. 2 Foundry is dull and in large supply at \$17 @ \$17.50 at tide. Red-Short Irons are nominally \$18 at furnace, but offers at less money are said to have been accepted for some of the very

Foreign Iron .- There is nothing doing n Bessemer, and prices are nominal at \$19 @ \$19.50, c.i.f., according to brand. Speigeleisen has been sold to the extent of several thousand tons at about \$21 for 10 @ 12 %, with \$25 asked for 20%.

Blooms.-Steel Blooms are quite active several thousand tons having been placed during the week within the range of our quo tations, say: Slabs for Nail Plate, \$29 @ \$30 at tide for Foreign and \$30 at mill for Domestic, and from that to \$35 for higher qualities; special grades for Boiler Plates and other uses requiring high tensile strength, \$34 @ \$36. Other Blooms as follows: Charcoal, \$52 @ \$54; Run out Anthracite, \$43 @ \$44: Scrap Blooms, \$33 @ \$34, and Ore Blooms, \$34 @ \$35.

Muck Bars .- There is a little more inquiry, and holders are firm at \$28.50 @ \$29 at mill, with a fair amount of business offered at about 50¢ less money.

Bar Iron.-The demand has been very light and prices hard to m aintain on such a Iron, for which orders to the extent of many thousand tons have been distributed around, well into August. The question of labor was the subject of a long discussion yesteragreement with the men terminates on the 1st of the month, but whether manufacturers will accede to the new schedule as de manded by the men remains to be seen. telling what a few days may bring forth. qualities of Bars 1.76 @ 1.756, and Skeln 1.821/2 @ 1.871/2¢, for Grooved, and 1.95¢

Plate and Tank Iron .- The demand i during the past two or three weeks being barely sufficient to keep the mills running. There is a little better inquiry, however, and the feeling is rather more cheerful, al-We though it is hard to see why it should be, Flange, 3.5¢; Fire-Box, 4¢.

Structural Iron.-The market is very uiet, with no demand except for small lots, and nothing looking toward improvement in the immediate future. There is an impression that things will start up again soon, but there are no inquiries that promise much business at the moment The only contract of importance given out lately is the Market Street Bridge, in this city, but the amount is comparatively small (probably 1500 to 2000 ten-), and in such dull times it will hardly be felt. Prices are about as last quoted, viz. 2¢ @ 2.05¢, delivered, for Angles; 2.1¢ @ 2.2¢ for Bridge Plate; 2.4¢ @ 2.5¢ for Tees,

Sheet Iron .- Demand irregular; some report large orders taken during the week others say nothing doing. The probability s that special quotations have been made on over. This statement is based on the ex- large lots, as those holding to firm prices are getting nothing beyond the ordinary run of small orders Prices about as follows:

Best Refined, Nos. 26, 27 and 28.

Best Refined, Nos. 18 to 25.

Common. 44¢ less than the above.

Best Bloom Sheets, Nos. 26 to 28

Best Bloom Sheets, Nos. 22 to 25

Best Bloom Sheets, Nos. 16 to 21 Blue Annealed... Best Bloom, Galvanized, discount

Steel Rails .- There is a good deal of inquiry from one source or another, but in spite of that prices have sagged off a little, and, while quoted \$34.50 @ \$35 at mill for fall delivery, concessions have been made on specially desirable orders. The tendency, in fact, is toward slightly lower figures, and it is not unlikely that \$34 has been accepted in one or two recent transactions. There are inquiries for large lots, chiefly for delivery in the Northwest, and it is not unlikely that competition for this business has led to a modification of quotations at some of the Eastern mills. There is no scarcity of business, however, and whatever concessions may have been made was for other reasons than immediate need of work.

Old Rails-Are about the most difficult things we have to quote. Any one wanting to buy would probably have to pay \$20.50 @ \$21 for spot lots, while any one anxious to sell might not get more than \$19 @ \$19.50. Holders are a great deal firmer, brand, quantity, terms of payment, time of but whether buyers will respond or not remains to be seen.

> Scrap Iron.-The market is steadier. and, with a better inquiry, holders ask outside figures, as fcllows: No. 1 Wrought Scrap, \$18.50 @ \$20; No. 2 do., \$13 @ \$14; Turnings, \$14 @ \$14.50; Old Car Wheels, \$15 @ \$16; Old Steel Rails, \$18.50 @ \$20; Fish Plates, \$23 @ \$24-sales 150 tons at \$23.25; Cast Scrap, \$14 @ \$15: do. Turnings, \$10 @ \$10.50.

> Wronght-Iron Pipe.—There is a continued good demand and at firm quotations, with discounts as follows: Lap-Welded Black, 571/2 %; Butt-Welded Black, 421/2 %; Butt-Welded Galvanized, 321/2 %; Welded Galvanized, 40 %; Boiler Tubes

> Nails .- The market has become much steadier within the past few days, and prices fixed at \$2.10 @ \$2.15 from store, with a very fair demand. Complaints have been made in regard to low quotations from Philadelphia, to which we reply that if makers will keep prices steady the market will be so reported. Prices have varied as much as 25¢ R keg during the past two or three weeks, and, although it is claimed that inferior Nails were sold at the low figures, it was impossible to ignore the fact that Nails were sold at extremely low figures, standard brands included. The market is more settled now, however, and there is a fair probability of prices being maintained at the figures now quoted as a minimum, say \$2.10 @ \$2.15 from store.

#### Pittsburgh.

Office of The Iron Age, 77 Fourth Avenue, (PITTSBURGH, PA., June 22, 1886.

There has been no important change in light business. The only thing that prevents the general business situation during the absolute stagnation is the demand for Skelp past week; there is usually a lull in June, when farmers are busy with their crops and merchants and manufacturers are engaged giving many of the mills work to carry them in taking stock. The outlook warrants the prediction that in most departments of trade there will at least be a fair degree of acday at the manufacturers' meeting, but tivity during the last of the present year nothing was decided upon either way. The although, of course, it will not be what it would have been had not the labor troubles taken place. The crop reports as a rule are favorable, although in some sections vegetation has been limited to a considerable ex With the present outlook it seems contrary tent by dry weather. No men watch the to reason to increase cost, but there is no crop reports closer than manufacturers, and no two interests are more closely allied than Meanwhile selling prices are about as quoted the agricultural and manufacturing. The last week, viz.: Best Refined Bars nominally demand for manufactured goods is gauged 1.85¢, but 1.8¢ is a general quotation, and largely by the crops, and it is not strange less than that in some cases. Good medium therefore that the manufacturer is interested in the welfare of the tiller of the soil, as it is on the latter that he is in large part dependent for a market for his products. The Iron wage-scale, as predicted in our ery light, the amount of business entered report of last week, has been settled for another year, and all apprehension of a strike is set at rest. The Amalgamated Association very sensibly concluded to renew the scale of the past year, which was accepted by the manufacturers. It may be added in this connection that the striking @ 2¢ for Angle Fish Bars. The latter are in prices as there has been for some time spirit is not near as common as it was a few

Fire-Box, 4.25¢; Steel Plates, Shell, 3.25¢; to the down river markets. This, in addition to being one of the largest "runs" ever made in June, has thus far been the most successful; only two barges were lost.

Pig Iron. - There has been no important change in the situation during the past week, with the exception of a more cheerful feeling in view of the settlement of the wage-scale. Business continues extremely dull, and as consumers generally take stock about the 1st of July they will make it a point to close this month with as little stock on hand as possible. If there was any prospect of an advance consumers would no doubt be inclined to contract for delivery next month, but as it is they are refusing to buy a ton beyond their immediate wants. However, now that the wage-scale is disposed of, and consumers almost without exeption are low in stock, an improved demand is probable, and furnacemen are hopeful of a stiffer market, but the prospect for an advance soon is not very encouraging. Consumers aver that the raw article continues to bring more relatively than the products, and there will first have to be an advance in the price of the latter before they can pay any more for the former. There have been considerable Southern Irons offered here within the past week or two, and, while it is offered considerably below the price asked for Irons made here or near-by, there has been, so far as we can learn, but little of it sold. Some of the Southern Irons are very good, but others are not, and a good many mill owners are not disposed to risk the regulation of their product for the sake of saving 50¢ ? ton on Pig Irons; moreover, the best Southern Irons cannot be sold here much under the price of wellknown home-made brands. We quote as

Muck Bar .- We repeat, in the absence of sales, former quotations, \$27 @ \$27.50, cash. Some of the mills, it appears, are not able to make as much as they require, while others have an excess and have some to sell, and others again can buy cheaper than they can make. There is not much margin for profit at present prices.

We can report a sale of Cold-Blast Charcoal at \$25.50, cash. In regard to Bessemer Iron large blocks are quoted at \$18 @ \$18.25, eash. We hear of a lot of some 600 tons being under negotiation and likely to be closed, but the price is withheld for the present.

Manufactured Iron.-Now that the wage-scale has been settled, orders, which for some weeks past have been coming forward more freely, caused in large part by suspicion of a shut down, will probably be light during the rest of this month. There is reason to believe, however, that business will pick up in July, and that it will be at least fairly active during the remainder of the year; there is no accumulation of stock either in first or second hands, and the reports from the West and South indicate that there will be at least an average demand. Manufacturers would like to obtain better prices, but there will first have to be an improvement in demand.. Consumption will have to come up closer to production before an improvement in prices can be realized. We continue to quote first-quality Iron on a basis of 1.65¢ @ 1.70¢ for Bars, 60 days, 2 % than rates quoted.

Nails.-There is no change to note in the ituation; trade continues slow, as it usually \$2 (a \$2 05, net cash. The next monthly meeting of the Western Association takes place in this city, but it is not expected that anything important will be done.

is likely to be the cas next meeting will be held in this city. No change in prices. Discounts on Black than a carload, discounts are 21/2 % less than rates above quoted. Boiler Tubes, 52 1/4 % Casing, 45¢ P foot, net; 2 inch Oil-Well Tubing, 13¢; 8-inch Drive Pipe, \$1.30 %

Steel .- Standard brands of Refined Cast Tool Steel, 8¢ @ 9¢ 7 1b; Crucible Machinery, 33/ ¢ @ 4¢; Boiler Plate, 4¢ @ 41/2¢; Open-Hearth Machinery, 21/2 @ 21/4. Steel Bloom Ends, no recent sales; nominal at \$20 50 @ \$21. Crop Ends also nominal at \$21 @ \$21.50. Bessemer Blooms and Billets, \$31 @ \$33.

old Rails -Old Iron Rails quoted at \$21 @ \$21.25; the last sale reported was at \$21.25, delivered at mill in Mahoning Valley. Old Steel Rails quoted at \$20 @ \$20 50 for short and \$22 @ \$22.50 for long lengths. The large consumers of Old Iron Rails here are said to be pretty well supplied, hence there is not as much inquiry as there was some time ago.

by the Edgar Thomson Works at \$36, cash. now being made of Steel by the Pennsyl- past. Present quotations are about as fol- weeks ago. The great event of the past at mill, for fall delivery. Both mills here

2.1¢ @ 2.2¢; Shell, 2.5¢; Flange, 3.5¢; shipment of over 10,000,000 bushels of coal unable to take orders for immediate delivery, and the same applies to most all other mills

Railway Track Supplies .- No recent change in prices; demand fair. Spikes, 2.40¢, 30 days, delivered: Splice Bars, 1.65¢ @ 1.75¢; Track Bolts, 2.75¢ with Square and 2.85¢ @ 3¢ with Hexagon Nuts.

Old Material-The demand continues ight, while prices remain unchanged. No. Wrought, \$17.50 @ \$18, net ton; Wrought Turnings, \$13 @ \$14; Old Iron Car Axles, \$23; Cast Borings, \$12, gross; Old Car Wheels, \$16.

Coke. - Blast-furnace Coke unchanged at \$1.50 P ton on cars at ovens.

#### Chicago.

Office of The Iron Age, 36 and 38 Clark St., Cor. Lake St., CBICAGO, June 21, 1886.

Quiet reigned during the week among the orkmen of the West, with one or two trifling exceptions. The business community appears to be regaining confidence, and were it not that harvesting time in this section is at hand and in other sections reaping already begun the improvement in business would be more noticeable. The rains of the early part of last week were timely and general where most needed, and have greatly improved crops that previously looked like failures. This favorable aspect is received by manufacturers and jobbers with pleasure. The benefit is already being felt in some lines of trade. Manufacturers are increasing their product, and jobbers are receiving heavier orders for fall goods. While a probable increase in demand is pretty certain, there is, however, very little room to anticipate higher prices. The signing of the scale by the iron manufacturers virtually dispels the likelihood of a strike and the possibility of higher prices from that cause. but with a steady increase in demand figures now obtained on all lines will likely rule firm and result in a satisfactory year's

Hardware.-The volume of trade reported for the week is somewhat less than the week previous, but of a sufficient strength to keep all jobbers quite active. The demand for Wire Cloth has fallen off, but increased somewhat for Screens, Butts, Locks, Window Glass, Carpenters' Tools, Blacksmiths' Tools and Carriage and Wagon Stocks. A slight advance is noticed in the price of Wringers. No other features of importance are mentioned on price lists. It s expected that trade will gradually diminish now until after the summer months have passed. The amount of business done dur ing June far exceeds that of last year, and thus far this year is the largest month j bers have had. Much of the trade that was deferred during April and May was received during this month, which accounts for the unusual activity.

Barb Wire .- No developments of importance have been wrought in the Barb-Wire market during the week. Trade has dropped to about the usual demand for the summer months, and is made up almost entirely of small lots. Jobbers continue the quotation of 31/2¢ for Painted Wire and 41/4¢ for Galvanized. We are informed that several new signers have been obtained to the "pool" company, but nothing further of importance has been done. Many of the signatures to the agreement are conditional, and, when they come to make the allotments to manufacturers, the prime obstacle to consummation will present itself. It is off for eash; poor stock from 10 to 10 less the opinion of knowing men that it will be impossible to make a satisfactory adjustment of the proportions to be manufactured by the different companies. Several of the is this month, but an improvement is looked most prominent makers in the West have for next month. Prices are still quoted at not yet signified their willingness to accept the terms of the agreement

Nails.-The demand for Nails continues about the same as a week ago. There appears, however, to be more disposition on Wrought-Iron Pipe.-There is nothing the part of country merchants to place new or important to note in connection with orders for carload lots. Manufacturers and the Pipe trade. Mills continue very busy, jobbers are more firm in prices demanded, and sales are consequently no larger. From advent of winter. At the adjourned meeting store jobbers continue the quotation of of manufacturers in New York nothing was \$2.10 in small lots for Iron Nails and \$2.25 done beyond mere routine business. The for Steel Nails. Carload price by manufact urers of Iron Nails, delivered in Chicago, ranges from \$1.95 to \$2.05, and on Steel Butt-Welded Pipe, in carlots, 45%; Galvan Nails from \$2.05 to \$2.15. All makers are ized do., 35 %; Black Lap-Welded Pipe, in at variance on prices, but show a tendency carlots, 60%; Galvanized do., 421/2 %. Less to be firm and advance rates. The Western Nail Association held a regular monthly meeting in this city last week. It is said that only about 25 per cent. of the membership was present. After discussing the business outlook it was decided to make no change in the present card price for the next 30 days. The remaining portion of the session was occupied in considering the present attitude of the Nailors' Association. The members of the Western Nail Association claim that it is impossible to accede to the demands of the workmen and successfully compete with the Eastern manufacturers, who pay less wages to their workmen. It was stated that Eastern manufacturers could place their Nails in the Chicago market at a less price than the goods could be manufactured for in the West, and solely because their labor was obtained at cheaper rates. It was also stated that most of the factories were taking steps to introduce Steel Nails, which would do away with the Steel Rails.—Heavy sections are quoted large force of puddlers now employed, and consequently lessen the expense of the manufactures. There were several charges lows: Ordinary Plate, 2.05 # @ 2.1#; Tank, week was the coal-boat freshet, with the are sold for several months ahead, and are made that members of the association wer

action was taken in the matter. Wire Nails regular advance for small sizes.

American Pig Iron -Market quiet, but in making sales it shows an underlying tone which possessesse elements of strength and hope for the future. Large manufacturers of every class of goods are looking toward placing orders for such quantities as they will require for the balance of the year. It is yet some weeks in advance of the time when the heaviest buyers place their orders, but the positive quotations they have re ceived upon casual inquiries strengthen the opinion that if any change in prices occurs it will be upward. Latterly there is nothing that forebodes weakness on the part of furnacemen, and since they have assumed this bold front and determined to obtain living prices the tide has turned in their The small buyer has been taking more than his usual quantity, and sales for the week have ranged from carloads to 1000 ton lots. Some of these were made at figures slightly in advance of prices that would have been accepted two weeks ago. It appears to be the object of all furnacemen to even up their figures and establish a uniform basis of prices. On carload lots of Lake Superior Charcoal we hear of no quotations at less than \$20, and un derstand that several brands cannot be had at less than \$20.50, four months. Car Wheel makers, in anticipation of obtaining contracts for a portion of the Wheels that will be required for the freight cars that are being let by the different roads, have been taking options on lots of Iron to be delivered in the next 30 days, and there is scarcely a furnaceman in this territory but what expects to have more or less demand for this purpose. Coke Irons, all Ore, are, if any thing, a trifle stronger, but the quotation of \$10, carload lots, is perhaps bottom to all buyers. Cinder Mixed Irons are quoted at \$18, with a slight increase in demand. There is no change in Ohio Standard Blackbands. and the quotation of \$20.50 on Briar Hill Iron is adhered to, while one other furnace announce their asking figures, \$20, as bottom. On Southern Irons there is no regularity in price. Quotations vary from 50¢ to \$1 % ton, according to buyer and quantity. We renew the nominal quotation of \$17.50 @ \$18 for No. 1 Foundry, \$17 for No. 2, \$16.50 for No. 21/2 and \$15.50 for No. 3. While it is said that the feeling among Southern furnaces is decidedly better, it is acknowledged that they have lost all that was gained in price during December and January, and are now only a shade above the ruinous figures that they experienced last August. It is thought that there is no possibility of a further decline, and consumers are looking around further for such lots as they will, in all probability, require for the balance of the year. Thus far, however, there have been no sales of importance made, and strong competition is brought out wherever there is a probable buyer.

Merchant Steel .- There appears to be a little improvement in the demand for Open-Hearth and Bessemer Steels, with prices a shade firmer, but the whole market is very much demoralized and offers no inducements to purchasers. Heavy buyers have not yet offered specificatios for bids, and until they do the market is likely to continue in the present condition. No changes in prices previously quoted have been reported.

Steel Rails.—Considerable surprise is expressed by makers in this vicinity regarding contracts which, it is said, were placed with Eastern mills for Western roads. Why these orders should be placed in the East without giving Chicago makers an opportunity to bid is a conundrum. They report no new demand save small lots, which are largely for immediate delivery and frequently from roads with whom they now have contracts. No changes are noted in laying has begun on the Georgia Pacific's quotations, which are \$38 for first quality extension westward, and ground has been and \$34.50 for seconds.

tron. - The signing of the scale by the Iron manufacturers has apparently cut Memphis. Forty miles of the latter have been short the demand for future delivery. Buy- let, and according to all the promises is to ing is said to be stronger on the best grades be pushed to speedy completion, track going of New Puddled Iron, on which we renew the quotations of 1.85¢ rates from store, and House-building is still one of the most active 1.75¢ rates from mill. Common Iron on lines of business here. The most notable card specifications is quoted at 1.60¢ rates, item in this connection is the breaking of flat, and on merchant orders at 1.55¢ rates ground for a hotel that will be one of the from mill. From store jobbers quote 1.75¢ in finest in the South. small lots. There is nothing very encouraging in the general aspect on account of the unsettled condition of prices, though in more actively now that foreign cars can demand some improvement is looked for within the next six weeks. We bear of several contracts which were placed, covering the next six months' delivery, at figures the furnaces, and the managers of some of quoted above.

Structural Iron.-Several good-sized tors are embarrassed by scarcity of cars. orders for Beams were placed during the Stoppage of their Ore supply has compelled week, but the majority of trade consists of the Sloss Furnace Co. to blow out one of July. Prices ruled in buyers' favor during small lots. Bridge material was in fair de | their furnaces. The market seems to resist | the past week. Some lower grades of Founmand, and considerable business of this character in prospect. We hear some com- apparent from this point of view. Prices Quotations for the past week: plaints regarding low prices that were made on Architectural Iron outside of Beams. Upon this basis one can truthfully say that the Beam combination is not cut, but the figures accepted for other material entering their puddling department and Bar and into the structure frequently decides who Light Sheet mills running day and night. shall obtain the contract to furnish the

Beams. for cornice-work. Cornicemen, however, ployers and to employees.

cutting under the established rates, but no say that their work is all in small jobs, and are quoted at \$3.50 % keg for 10's, with the Higher prices are reported on a grade of come to the shops in the past few days. 10 % off on Juniata, and 60, to and 5 % off

> Black Sheets-Are in better request from country merchants and Stove manu- put. facturers. Stove Pipe makers have not been very active, yet it is possible that weeks, and prices are, if anything, a shade firmer than they have been in the last 30 from store: No. 24, 2.80¢; Nos. 25 and 26, 2.90¢ and No. 27, 3¢.

Old Rails .- Prices have stiffened up a little on Old Rails, and \$19 is now quoted as the price for Chicago delivery. The N. C. R. M. Co. are quoting \$19.50, Milwaukee. Some 300 to 500 tons have been offered at \$21, and buyers could be found at about \$17 50 @ \$18. Old Steel Rails have been in fair request, particularly in short leigths. Rails are not scarce, but prices asked are higher than buyers are willing to pay.

Old Wheels .- There has been an inreased demand for Old Wheels at former prices. Sellers have advanced their figures to \$15.50, cash, as their lowest figure, which is from 50¢ to 75¢ a ton higher than buyers have offered.

Scrap Iron.-There is no change in the ondition of the Scrap-Iron market save that the stock accumulating is getting to be burdensome. No. 1 Wrought is quoted by dealers at \$17.50 @ \$18, while mills are offering about \$17. Another source of complaint is the numerous gradings that are demanded, which makes it difficult to quote a price that will cover all included under this heading. No. 1 Mill is quoted at \$14, and No. 2 at \$9. No other changes are reported.

Pig Lead .- A sale of 1100 tons Richmond to New York speculators is reported, which has strengthened the market some and made quotations a trifle higher. The market is now said to be tolerably firm at 4.60¢, and sales of 400 tons are announced. The Pig-Lead market is so well in hand that the moment a surplus stock is visible speculators gobble it, and thus maintain prices, which would from circumstances be weak. Manufacturers of Pipe and Sheet Lead have large stocks on hand, and are buying very lightly at present.

#### Birmingham.

BIRMINGHAM, ALA., June 21, 1886. The business world has been taking on a ummer complexion very perceptibly in the last week. Less activity is noticeable on the streets here, and jobbers report less business throughout this region than there has been in several months. Railroad traffic is the one thing that holds up to its spring volume, and it in a large measure is only making up for the interruption of the first of the month. The promises for the fall are hardly so good, either. An excess of rain in the last few days has materially damaged crops below here. In certain districts the prospects for cotton and corn are said to be as bad as they have been at this season in 20 years. Complaint is not general through out the State as yet, though, and on the whole fair harvests may reasonably be expected. The industrial atmosphere is full of promise for this city. Its existing enterprises are all busy and new ones are coming constantly. Among the assured accessions are another bridge and bolt concern and a good sized cotton compress, the buildings for the former being already under way. No table progress has been made in railroad construction in the last 10 days. Trackbroken here on the Kansas City, Fort Scott and Gulf Railway Co.'s line for down as fast as the grading will permit.

Pig Iron-Is selling in all directions in small and medium sized lots, and is moving come in to supply the deficiency in the equipment of our railroads. There is no such means of relief between the mines and the latter, along with Coal and Ore opera very stubbornly the bullish tendencies dry have fallen in price 500 @ \$1 }? ton. remain at the unsatisfactory figures they

reached a month ago. Finished Iron.-The Birmingham Relling Mills still get business enough to keep The slight stiffening of prices noted a week ago is well sustained, too. The foreshad-Galvanized Iron.-Some improvement owed continuance of the present scale of is noted in the demand for Galvanized Iron | wages is satisfactory here both to the em-

Machinery .- A good volume of orders for no large work is now before the trade. Machinery and for structural specialties has Iron that has heretofore been classed among | The largest item is a hoisting outfit wanted seconds. The bundle trade from store is by a leading Ore concern for an increase of said to be improving. Johbers quote 60 and production. Several good orders have been received from Southern Georgia and Florida.

Coal-Is quiet, without perceptible weakening of prices, at material reduction of out-

Yellow-Pine Lumber .- A heavy business is doing in this line with the North, West they have placed some orders quietly. On and Southwest, and the demand is conthe best grades of Black Sheet the d mand stantly on the increase. Shipments were has been fairly good during the past two resumed only a few days ago on the Louisville and Nashville Railroad, which moves the greater part of the product of the State. days. We make the following quotations The change of gauge thus cut off supplies for more than two weeks.

#### Chattanooga.

Office of The Iron Age, Carter and Ninth Sts., CBATTANOGGA, June 21, 1886.

While general business is dull, as is usua through the South at this time of the year there seems to be an undercurrent and feeling among the wholesale merchants that the volume of business will soon revive, and many of them are shaping their course accordingly. Their argument is that goods of all lines are very cheap and cannot go lower. while there is a strong probability that there will be a stiffening up before long; that money is plenty, and they propose to lay in stocks sufficient to meet what seems to them will be quite a spirited demand as the fall approaches. There is a tendency, however, among many of the large consumers to go to buy locally for articles for immediate use. Most of the projected furnaces are assuming such shape in expenditure of money as to give assurance that all of them mean busine-s and will push their enterprises forward as fast as economy would dictate. There can hardly be a doubt that nine furnaces, most of them of the largest capacity, will be ompleted during the coming year in the Southern district. More are projected, but developments have not yet reached the stage to warrant particular mention.

Pig Iron.-The outlook for this article is certainly brighter than what it was some wo or three weeks ago, although we can hardly ascribe it to any particular cause While probably many reasons could be sug gested, the reconciliation of labor in the different industries is no doubt one great reason. Confidence in the continued pros perity of the country seems to have become a firm conviction of most of the business men of the country, and a feeling of confidence exists to a much greater extent than at any time during the year. While prices are low, the many inquiries that are being received among the producers and brokers would indicate that the prospective consumption will cause prices to go higher. The furnaces in the Southern district could to-day place their entire output for the next six months at prices that are now ruling Some are placing large orders, but the policy of selling at such figures is questioned by many who are holding off for higher figures. Freights to Northern and Western points Eastern points they remain the same.

Coal and Coke -Coke still remains erious obstacle in the full development of the furnace output, and many a temporary bank is the consequence. Nearly all the mines, however, are doing their best to remedy the scarcity as fast as possible, but still the supply is short. As a consequence of this condition of things many a bushel of what is called Coke goes into the furnace, and the result is an inferior grade of Iron.

Miscellaneous .- We have to note the ocation of new powder works near this city. They are called the Dixie Powder Co., and will manufacture dynamite only. They commence manufacturing the present week going for several months. Quite an interesting feature of the results of the change of the gauge of the railroads in the South is the number of cars that come to us from the North with initials of roads that were heretofore unknown to us. Cars from Maine, Vermont, and, in fact, from every State in the North, can be seen almost daily passing through our town, destined for points South.

#### Cincinnati.

JUNE 21, 1886.

Pig Iron .- Dealers report an exceedingly dull market. Consumers are covering up preparatory to taking acount of stock in

Charcoal Foundry.			
Hanging Rock, Best, No. 1, 4 mos. Hanging Rock, Good, No. 1, 4 mos. Hanging Rock, Good, No. 2, 4 mos. Southern No. 1, 4 mos. Southern No. 2, 4 mos.	20,00 18,50 18,00	600	\$21,50 20,50 20,00 19,00 18,00
Coke Foundry.			
Ohio and West Pennsylvania, No. 1, 4 mos	18.00	@	20,00
2, 4 mos	17.00	60	18.00
bama and Georgia, No. 1, 4 mos.	17.00	0	18,00

Silver-Gray Softe Ohio Stonecoal, No. 1, 4 mos. Ohio Stonecoal, No. 2, 4 mos. Ohio Stonecoal, No. 3, 4 mos. Car-Wheel uthern Warm-Blast Char'l, eash uthern Standard Warm-Blast Southern Standard Warm-Blast Charcoal, 4 mos. Hanging Rock, Warm-Blast Char-23,00 @ 25.00 coal, 4 mos.
Hanging Rock, Cold-Blast Charcoal, 4 mos.
Southern Cold-Blast Charcoal, 4 24.50 & 24.50 & 19.00 @ 20.00 Maryland and Virginia ...

Scrap. 20,00 @ 20,50 16,50 @ 17,00 Wrought, for range of grades, ? 100 fb. Cast, for range of grades, ? 100 fb. Customary discount 40 @ 50¢ 7 ton for cash

from time prices. The above quotations are f.o.b. here, or less the freight to Cincinnati when orders are filled at furnaces.

#### Louisville.

W. B. BELKNAP & Co., Louisville, write as follows, under date of June 21: While there is nothing to be elated over in the present business situation, neither are there any special grounds for discouragement. Trade is growing a little greater in volume as we approach July, and in some articles prices are inclined to harden. The renewal of the Iron scale for the coming year by the Amalgamated Association, at last year's figures, while it deprives the market of any unusual stimulus, at the same time cannot ultimately fail to improve it. Up to now manufacturers were afraid to make prices except at such figures as failed to interest buyers. Now there is a certainty to go on, headquarters to make their purchases. Not-withstanding this, however, many have to as this difficulty is out of the way, and uyers will feel more confident that figures taken are nearer to a true expression of value than if the doubtful labor question were not solved. We think, moreover, that the influence of this decision upon the whole country must be beneficial. That a large body such as the association represents should sit in convention a couple of weeks, and examine into matters very thoroughly and then report that there was nothing apparent to justify an advance, must be a convincing argument against disturbances to those in other branches as well.

Bar Iron-Seems to be in plentiful supply. Many of the mills are soliciting orders for guide-mill sizes and seem to be somewhat overstocked. Base sizes are well upheld.

Sheet.-There is no change to note except that Sheet Iron is being much more largely used than before. The various forms of Corrugated and V Crimp are daily becoming more popular.

Nails.-Within the past week Nails seem to have gathered a little strength. The extremely low quotations which were made by some of the manufacturers of Iron Nails have been withdrawn, and the inquiries for Steel Nails particularly have become much more numerous than of late. There seems to be no special deficiency in the supply, but only a good demand for current wants. This market was likely to have been affected by low water but for the timely rains, which make it possible for the Wheeling and Pittsburgh packets to run again.

Wire.-No amount of promises of pools syndicates and royalties seem to have been able to uphold the Barb-Wire market. Prices have steadily weakened since the early spring, and have, we fancy, touched as low a price as ever known in the history of have been reduced considerably, while to the article. As is usual, the interesting thing is to know where the stopping place is

GEORGE H. HULL & Co., of Louisville, reort to us as follows, under date of June 2: The market for Pig Iron has been very ettled and irregular during the last week Some large sales of choice brands have been made at full outside figures, and there have been some indications of a firmness that has been absent for some little time. On the other hand some large sales of irregular and mixed grades have been made by Eureka, Woodward and Dayton furnaces, on private terms and at very low prices—supple in the neighborhood of \$13. sales made have had a depressing influence in this immediate vicinity. It is likely, however, that the low sales were made of Silver Gray and Bright Irons to clear up yards, with a capacity of 2000 pounds per day, and probably will not influence prices on The demand for this kind of explosive has increased very much of late through the South and the parties can though the some indication of the south south some indication of the south south some indication of the south so the south South, and the parties say they have already enough orders on their books to keep them cash as below:

Cash as ocion .		
Pig Iron,		
Southern Coke, No. 1 Foundry	\$16,50 65.	\$17.50
No. 2	15,50 00	16.50
85 No. 216 **	15,00 @s	16,00
Hanging Rock Coke, No. 1 Foun-		
dry	16.50 66.	17.00
Hanging Rock Charcoal. No. 1	-	
Foundry	18.00 G	19,00
Southern Charcoal, No. 1 Foundry	17.50 @	18,50
Silver Gray, different grades	14.00 06	15.50
Southern Coke, No. 1 Mill, Neutral	14.50 @	15,00
" No. 2 " "	13 50 66	14.00
" No. 1 " Cold Short	14.00 @6	14.50
" Charcoal, No. 1 Mill	17.00 @	17.50
White and Mottled. different grades	12.00 @	13.00
Southern Car-Wheel, standard		
brands	24.00 @.	25,00
Southern Car-Wheel, other brands	20.00 @	
Hanging Rock, Cold-Blast	24.00 @	
Warm-Blast	20.00 Ga	21.00
Old Material The market for	Old Ma	terial
in militaria Inc abance in	maine.	Old
is quiet, and no change in	price.	Old
Wheels, that were quite plent	y two v	weeks
ago, are now scarce and no	lots off	ered.
We quote for cash as below:		

## St. Louis.

Iron will change hands within the next 60 days. Prices for immediate delivery are not very strong, but we have heard of some furnaces refusing orders at the present furnaces refusing orders at the present furnaces for future delivery. There is considerable figuring going on, but sales of any consequence for the past week have been

G.	rew and far between. We que	ote:	
3	Charcoal Foundry		
	Missouri	\$17.00 @.	\$18.50 18.50
ì	Coal and Coke Found	111.	
1	Southern, No. 1. Southern, No. 2 Ohio Softeners	18,00 @	18,56 17,56 20,0
1	Mill Iron.		
	Missouri Southern	16,00 @ 15,00 @	16,50 16,00
1	Car Wheel and Malleable	Irons.	
	Southern Lake Superior	20,00 @ 21.00 @	25,00 23,00
-	Old Wheels	15.00 @	16.00 5.68
П			

#### Detroit.

Charles Himrod & Co., dealers in Pig Iron, Detroit, Mich., report, under date of June 21, as follows: It is with some satisfaction that we can note the continuance of good demand at fair market rates for the past week Judging from market reports elsewhere this seems to be the general rule throughout the country, and leads us to be ieve that, notwithstanding the large quan ity of Iron that is being made, there is be an advance, or that if such an advance should take place it would be much higher, is a question that the next few months will solve. It looks, however, as though the taste of good times which the Pig Iron manufacturers had during the early part of the year had produced a lasting effect, the long period of depression and actual loss in business being then supplanted, temporarily at least, by a prosperous time, and they are very loth to relinquish the idea that this time is past. Although the dea that this time is past. Although the ctive demand, commencing the latter part of last month, has been very steady, it has not effected anything except a firm feeling in prices. Pig-Iron statistics show that there is not a very great accumulation of Iron, still there must be a steady and large demand to sap up all of the Iron that is being made, and we trust that the hopeful ones are not oversanguine in stating that this is coming during the present year. Southern Irons show more weakness than any other grades, and Lake Superior Charpals lead in firmness, followed by Bessemer and Northern Coke Iron. We know of one offer having been made for a round lot of Old Car-Wheels at 50¢ higher than our last Old car-wheels at 50% nigher than our last report, which was not accepted. Outside buyers are inquiring prices, we presume in a speculative way, and seem quite ready to take hold should present anticipations approach a little nearer confirmation ket is fairly quotable to day as follows:

Lake Superior Charcoal, all num-				
bers	\$22,00	0	\$22,50	
Lake Superior Coke, All Ore	20,25	0	21.00	
Lake Superior Coke, Cinder Mixed.	19,00	(12)	20,00	
Standard Ohio Blackband	20,25	an.	21.00	
Southern No. 2	17.00	60	17.50	
Southern Silvery, Open		(en	17.50	
Southern Silvery, Close		(n)	17.00	
Jackson County, Ohio Silvery	18,50	GB.	19,00	
American Old fron Rails	20,00	(m	22,00	
Old Wheels	17.00	(m)	17.50	

#### Coal Market.

The Coal market is dull and weak, with ittle prospect of more strength for a month Shipments are almost exclusively on former orders. The dullness in Anthracite is partly due to the renewal of mining in the Bituminous regions, manufacturers to ome extent availing themselves of the change. Domestic sizes continue to accumulate, but not excessively. The Lehigh Navigation Co. claim to be an exception, that they have been compelled to exceed the quota for June under the official allotment, but most of the companies will put a check on production before the close of the month. The common impression is that there will be no advance in either tolls or prices for the com ing month

The official report of tonnage for May shows an output of 2,253,639 tons, with a total of 11,931,057 tons this year to June 1, as against 10,211,290 tons in five months last year. The stock on hand June 1 was only 514,451 tons. The allotment for July is 2,500,000 tons. Prices of Anthracite as a Prices of Anthracite as a 30¢ P ton, but the concessions in most cases are by individuals rather than companies. Bituminous Coal is quoted about \$3.25.

Lovegrove & Co., 152 North Third street, Philadelphia, have introduced a new style of wrought-iron grate-bars for vertical boilers. This grate consists of a cast-iron ring which is in two parts, so as to place in the boiler without removing from base. It has projections for holding the bars and forming air space. The bars are made of refined wrought iron, can be removed and straightened should they warp; a single bar or any number can be replaced by new. Taken altogether it is believed to be complete as well as economical.

The Dingley Shipping bill was signed by the President, with the understanding that a supplemental bill will be recommended making it clear that all expenses attending its practical working shall be paid from the Treasury.

It is reported that the River Euphrates bids fair to disappear altogether in the spreading marshes just below Babylon, which have ruined the steamboat channel and are now obliterating navigation for

Tatum & Bowen, dealers in oils and ma-

# Trade Report.

#### General Hardware.

The demand for Hardware, as is to be expected at this season, is moderate, ordering being for the most part limited to small lots for immediate wants. Prices are in general well sustained, and, although some leading lines are irregular, the general tone of the market is firm. Some buyers from the West and South are in town, but have not yet purchased largely. Collections are not as prompt as might be desired. Stocks throughout the country are light, and merchants are not disposed to materially increase them. NAILS

The New York market continues to be irregular, low prices being accepted by some sellers, while others decline to meet the figures so made. In the aggregate con siderable quantities have been sold, and there is fair inquiry. We quote for Iron Nails from store \$2 to \$2.10, with the usual concession for carload lots on dock.

BARB WIRE. Current business in the territory tributary to the New York market is small, with the usual quotation at 43% cents, delivered, for carload lots, which is shaded by sellers of Western Barb Wire, a concession compensated. as Eastern manufacturers claim, by facilities in shipment and delivery which they

TACKS.

can offer their customers.

The Tack market, which has continued for some time without material change, has recently developed lower quotations. leading companies have many of them heretofore pursued a conservative course, and have not made as low prices as some of the smaller concerns. A disposition is, however, now appearing to offer inducements with a view to securing the orders of the trade, and the market is quotably lower. It is not necessary to refer to the extreme prices that are being made, which indeed vary considerably according to the disposition of the different manufacturers, there being at present no uniformity in quotations.

The following discount sheet has been issued by A. Field & Sons, Taunton, Mass., and 78 Chambers street, New York. It applies to the Hardware list of prices dated September 1, 1882, and the supplement dated January 1, 1886, and is subject to the usual additional discount of 10 and 2 per cent. for cash .

American Iron Carpet Tacks, all kinds						72
Steel Carpet Tacks, all kinds					. 7	73
Steel Carpet Tacks, all kinds Swedes Iron Carpet Tacks, all kinds				•		-
Swedes Iron Tacks				0		
Swedes Iron Upholsterers' Tacks					0 1	٠.
Tinned Swedes Iron Tacks		۰		0		1. 1
Tinned Swedes Iron Upholsterers' Tacks				*		
Tinned Swedes fron Uphoisterers Tacks			0 0			
American Iron Cut Tacks	0		0.0			
Gimp and Lace Tacks	٠				0 1	
Tinned Gimp and Lace Tacks		0				
Copper Tacks Copper Finishing and Trunk Nails						
Copper Finishing and Trunk Nails						
Finishing Nails						
Trunk and Clout Nails						
Tinned Trunk and Clout Nails						
Basket Nails						
Common and Patent Brads	•				• •	
Hungarian Nails and Miners' Tacks	0			0		
Cigar Box Nails	*		•			0.0
Chair Walls		*				
Chair Nails	٨	0.1		۰		. !
Zinc Glaziers' Points			4. 4			. 10
Tinned Capped Trunk Nails						!
Picture Frame Points						-
Looking Glass Tacks						
Leathered Carpet Tacks						
Brush Tacks						

The discount sheet also announces the following extras, which are probably made thus specifically and in detail in view of the close prices at which the goods are now

1. For Tinned and Coppered Goods on Hardware list for which prices are not given, add 10 cents per pound. 2. Goods named on Hardware list sold by

the pound, when put up in ½-pound papers, ½ cent per pound will be added to the list. Goods named on Hardware list sold by

3. Goods named on Hardware list sold by the pound, when put up in ¼-pound papers, I cent per pound will be added to the list. 4. When Tacks are put up in boxes of 100 papers each and packed in a case, an extra charge of 10 cents per box, net, will be

5. Strapping boxes, 10 cents each, net.
6. Goods delivered by freight to New points of destination, as heretofore. No expressage allowed.

The following is the revised Shoe Finders' 10 and 2 per cent. for cash : Iron Shoe Nails, 4.8 in. and longer, per lb... Iron Shoe Nails, 3½-8 in. and shorter, per lb. N. B. Shoe Nails, per lb...

Swedes and Charcoal Iron Shoe Nails, per lb. 7466

Zinc Shank Nails	£ 216-8	36, 3 and	6 8 in.
Copper Shoe Neils, per l	b		24
Brass Shoe Nails, per lb.			90
Copper Gimp Nails			44
Brass Gimp Nails, per lb			40
Copper Shank Nails, per	lb		30
	2-8 and	% and	4-8 in.
	8 in.	816-8 in.	longe
American Iron Hunga-			
rian Nails, per pound.	80.12	.09	.08
Swedes Iron Hungarian			
Nails, per pound	.14	.11	.10
Bevel Head Swedes Iron			
Hungarian Nails, per			4.00
pound	,18	.16	.15
Concave Head Swedes			
Iron Hungarian Nails,	9.65	4.0	4.00
per pound	.18	.16	.15
Swedes Fancy Head,			
Iron Hunkarian Nails.	.18	4.0	0.00
per pound Finned Swedes Iron	.18	.16	.15
Hung'n Nails, Fancy			
Head, per pound	.28	.21	.20
Oval Head Shank Nails	. 40	.81	.200
or Tacks, per pound.	.26	.18	.13
		26, per po	

Brass Hungarian	Naiis,	per	pound,	in	pound	-
or 16-pound pap Steel Shoe Nails,	ers	s, pe	r pound	, in	pound	21

	Steel Shoe Nails, per M. \$0.14		in. 1	onger.
	214-8 in. Channel Nails, per pound. \$0.30		in. 3	316-8 in .20
- 6	4-8 in. Channel Nails, per pound. \$0.15			in. an longer
8	Shoe Tacks, per 1/2 oz. 3/4 oz.			
I X		.08	.03	.18
8	Shoe Tacks, per pound . \$0.16	6 oz. .15 .08	3 oz. .14 .031/2	4 oz.
			4-8	in an

snoe Tacks, per M	.08	.00	.00%	,04
M	% in.	31/2-8		in. an longe
Miners' Tacks, Swedes Iron, per pound	\$0.13	.11		.10
Miners' Tacks, Amer-	% in.	316-8		in. an longer
ican Iron, per pound.	\$0.13	.13	)	.09
Countersunk Swedes Nails, per pound				

pound
Sole Tacks, per pound
Patent Countersunk
Swedes Nails, per
pound
Last Nails, per pound
Check'ed Head Countersunk Nails, per
pound 36 316-8 4-8 and 416-8 in. \$0.24 .20 .16 56 and 516-8 6-8 \$0.14 .12 pound.....ancv Head Patent Corrugated Coun-t'sunk Swedes Last Nails, per pound...

2-8 and % and 8-8 in. and 21/6-8. 31/6-8. longer. oncave and Counter-sunk Head Brass Nails, per pound..... Concave and Counter-sunk Head Copper Nails, per pound..... 216-8 36 316-8 4-8 416-8

Iron Gimp Nails, per \$0.46 .32 .29 .24 .22 6-8 in. and longer. .18 516-8 Iron Gimp Nails, per pound. \$0.20 2 and 3 and 4-8 in. and 2\(\frac{1}{2}\)-\(\fr

Canc Star Nails, per pound, 20.42 .32 .27
Swedes Slivers, pounds, all sizes, per pound. ... 14¢
American Silvers, pounds, all sizes, per pound. ... 14¢
Brass Channel Nails, per pound. ... 22¢
Iron Screw Head Nails, plain shanks, per pound. 20¢
Iron Screw Head Nails, corrugated shanks, per pound. ... 28¢
Iron Screw Head Nails, corrugated shanks, per paper (75 Nails) ... 5¢

4-8 % 6-8 % 8-8 in.

tound Screw Head Nails, Tinned. per paper (120 Nails... Round Screw Head Nails, Brass, per paper, (120 Nails).

MISCELLANEOUS PRICES.

Charles F. Henis & Co., 122 North Sixth street, Philadelphia, quote their Henis Fruit and Vegetable Press and Strainer as follows, f.o.b. Philadelphia: Lots of 1 to 5 gross at \$45 per gross, cash 30 days, subject to a discount of 2 per cent. if paid within 10 days from date of invoice. Lots of 1 dozen and upward are quoted at \$4.50 a dozen.

The following are the prices of the Axle Grease manufactured by the Fraser Lubricator Co., Chicago, Ill.:

11/2-pound wood boxes, 4 dozen in case, per 1½-pound tin cans, 2 dozen in case, per case.
-pound tin bail cans, 2 dozen in case, per case.
-pound tin bail cans, 1 dozen in case, per 5-pound the values of the case, per case.
5-pound wood boxes, 1 dozen in case, per case.
15-pound wood covered pails, per doz.
25-pound wood covered pails, per doz.
56 and 112 pound kegs, per pound. 8.25

The market on Tackle Blocks continues irregular and low. There is a good deal of competition among the different manufactarers, and we regret to observe no tendency toward firmer prices.

Many jobbing houses and some of the nanufacturers are giving small extras on Locks with a good deal of freedom. Careful buyers can usually obtain concessions beyond and the Crystal Paper and Wood Lined. the regular printed price.

We have recently had occasion to allude York, Philadelphia and Boston, and freight to the irregularity in the Screw market, either prepaid or allowed to other near owing mainly to the shading of prices by owing mainly to the shading of prices by some of the smaller companies. This condition continues, with indications of concessions by companies that have up to this time list, which is subject to the usual discount of refused to make them, so that the market is slightly weaker and prices a shade lower.

> The following are revised quotations made by E C. Atkins & Co., Indianapolis, Ind., on their line of Saws, Saw Handles and Saw Tools :

Silver Steel cross-cut, per foot.         \$0.75           Concave Tooth Dexter cross-cut, per foot.         .55           Special Steel Diamond cross-cut, per foot.         .30           Champion Tooth cross-cut, per foot.         .30           All other brands cross-cut, per foot.         .30           One-man cross cut, per foot.         .40           Gircular, discount.         .50 s           Shingle, Concave, discount.         .45 s           Gang, Drag, Ice, discount.         .45 s           Frooving, Mulay, discount.         .45 s           Band Saws for log mills; special prices.           Wood, No. 1, per dozen.         \$3.00           Wood, No. 2, per dozen.         \$2.50           Wood, No. 3, per dozen.         2.25           Wood, No. 4 and 5, per dozen.         3.50           Wood, No. 6 and 7, per dozen.         4.26           Wood, No. 6 and 7, per dozen.         4.26	
Frames (Thorough Brace) 8.75	1
Saw Handles.	ľ
No. 1 Loop, per pair       \$0.30         No. 3 Loop, per pair       \$2         No. 2 Reversible       \$2         No. 4 Reversible       \$2	1
Patent, per dozen sets	1
Criterion Improved	1
F. K. Sibley, Waltham, Mass., manufact-	1 5

joined the combination of Sand and Emery paper manufacturers. His prices are as follows, subject to a discount of 20 per cent.

Large size, 9x12 in., all Nos. to 60, per ream..\$16.00
Medium size, 7x9 in., all Nos. to 60, per ream. 10.50
Rolls of 8 yards, 3½ in. wide, all Nos. to 60,
per roll. 0.30
In yards, 27 x 36, 3½ in wide, all Nos. to 60,
per yard 0.30

The following are the list prices of Washburn's Improved Self-Locking Blind Adjuster, the discount being 20 per cent, or 20 and 10 per cent in gross lots

Japanned.

10-in. Bar, for Frame Houses	\$2.50	\$80.00
12 in. Bar, Brick or Frame	3.00	36.00
14-in. Bar, Brick or Frame	3.50	42.00
16-in. Bar, Brick or Frame	8.85	46.00
18-in. Bar, Brick or Frame	4.20	50,00
Galvanized.		
10-in. Bar, for Frame Houses	\$3.35	\$40.00
12-in. Bar, Brick or Frame	3.85	46 00
14-in. Bar, Brick or Frame	4.85	52.00
16-in. Bar, Brick or Frame	4.70	56.00
18-in. Bar, Brick or Frame	5.00	60.00

The manufacturers of Augers and Bits hold a meeting in this city to-morrow for the purpose of considering the feasibility of making a further advance. Present prices are referred to as well maintained.

The manufacturers of Chisels and Draw ing Knives have been in conference with a view to ascertaining whether it is desirable to make an effort to secure better prices.

ITEMS.

Woodruff, Miller & Co., Mount Carmel, Conn., have recently added Ox Balls and Eagle Heads to their line of manufactures. The Ox Balls are represented in their advertisement on page 31. Special attention is called to the fact that the Ox Balls have sharp cut threads, thereby insuring easy application and also excellency of the finish of the goods. Besides their Nos. 1 to 6 Ox Shoes, they are now making a smaller size, No. o, the length of which is 4 inches. These Shoes, it will be remembered, are made with Steel Toe Calks, and the manufacturers refer to them as having a continually increasing trade.

Lovell, Tracy & Co., Hartford, Conn. have put on the market this spring for sale by the Hardware trade a I-pound package of fine Axle Grease, which is named Axleine. The package is 4½ x 3½ x 2 inches, of handsomely decorated tin, assorted colors, the box standing on end. The trade will appreciate the convenience of having Axle Grease put up in this form, instead of in the ordinary wooden boxes, which are unattractive, liable to break, and not always tight. This departure is intended to give the article a place among shelf goods, and being always clean, and the boxes made in red, blue, green, yellow, orange and other colors, will be showy and attractive. The cost is referred to as but a trifle more than goods in wooden boxes. The Axleine is referred to as very popular with the trade as far as introduced. It is described as a solidified oil, a substitute for castor oil, and a perfect lubricant for fine carriages, wagons,

The Wells & Nellegar Co., Chicago, Ill. have issued a price current in which they refer as follows to trade matters:

The demand for Hardware continues good. The month of May commenced by the railroad companies being obliged to decline freight on account of the freight handlers' strike, but the difficulty was overcome in a few days and business resumed its natural course. Since then the volume its natural course. Since then the volume of trade has been in excess of the corresponding time last year. Prices are without material change, except in Barb Wire and Nails, these staple articles being lower. At present prices it would seem as though bottom has been reached.

The Peck, Stow & Wilcox Co., Southington, Conn., and New York, have discontinued the manufacture of Apple Parers, and are offering none this seaso

Our readers will observe the announce ment on page 37, in which Sidney Shepard & Co., Buffalo, N. Y., call attention to their line of Stove Boards-the Zine Paper-Lined

Keith, Benham & Dezendorf, Chicago, Ill., issue an attractive Gun catalogue, in which they illustrate the line of Guns, Rifles, Pistols, Ammunition, &c., which they are handling. It is intended for dealers only, the prices being referred to as such as will afford a fair retail profit. In addition to the display of the variety to which the pamphlet is devoted there is an illustrated description explaining how Damascus Gun Barrels are made, and a synopsis is given of the game laws in some of the Western States and Territories.

W. A. Huffman Implement Co., Fort Worth, Tex., issue a map of Texas, in connection with which attention is called to the line of Mill Machinery, Steam Engines, Agricultural Implements, &c., in which they are dealing.

Wyckoff & Randolph, Morrisonville, Ill., in addition to their Hardware business, are manufacturers of Spiral Spring Seats, to the special features and advantages of which they allude in a circular.

William P. Myer, Indianapolis, Ind., manufacturer of Elevator Buckets, Rain-Water Cut-Offs, Patent Specialties and Pieced Tinware, and dealer in Stamped and Japanned Ware, issues price list No. 4 relating to some In the introleading goods in this line. ductory circular to the trade allusion is made to the fact that dealers generally, and even manufacturers of a certain class, think they 

gested that the way to correct the evil is to buy direct from a responsible manufacturer.

We direct the attention of the trade to the announcement on page 18 of an important auction sale by Haydock & Bissell, on account of the Central Mfg. Co., Boston. which will take place at their salesrooms, 12 Murray street and 15 Park place, New York, on Tuesday and Wednesday, July 13 and 14, at 10 a. m. each day. This sale is announced to cover 4000 cases of Swedes and American Tacks and Nails. Further particulars are given in the advertisement.

The Rogers & Hamilton Co., Waterbury, Conn., have established and newly equipped a plant at Waterbury for the manufacture of a superior quality of Silver-plated Goods. C. A. Hamilton, for 20 years with Rogers Bros. (the past 12 as secretary of the company), and as such pleasantly known to the general trade, is president of the new company, and Wm. H. Rogers secretary.

Our readers will observe the advertise ment of the Little Giant Ice Grip Co., 531 Commerce street, Philadelphia, in which they illustrate a new Ice Tool, some of the ases of which are there referred to.

J. C. McCarty & Co., 97 Chambers street, ssue a convenient pamphlet containing a list of the manufacturers whom they represent, the alternate page being left blank for memoranda. The extensive lines of goods covered by their agencies are there indicated.

WHAT THE TRADE SAY.

The following paragraph in relation to the ase and cartage question comes to us from North Carolina

I agree with "Pennsylvania" about boxng and cartage, and think the manufacturers' agents and jobbers ought to include all boxing, packing and cartage in the price of the goods when sold. Then the dealer would know what he would have to pay for the goods, and not have to guess at the price laid down. Other lines of goods are packed and delivered free, and I see no reason why Hardware should not be.

From Indiana we have the following re ort of the condition of business:

Trade is somewhat better than a month ago, but not up to the average. Farmers complain about any price one may ask them for goods, comparing the present price of wheat, 72 cents, with the old price, \$1 25, yet they acknowledge that labor is no lower. They have come to the conclusion that they cannot compete with low Western land in cannot compete with low western land in raising wheat on farms here worth \$75 to \$100 per acre. Yet when fall comes around they will feel lost, as if they were not doing right, not to put in as much wheat as they always have done.

We have received several communications from Hardwaremen in regard to the annoyance they experiences from manufacturers and jobbers who sell to consumers at trade prices. An Illinois Hardwareman remarks :

A Stove house that will sell one cook or heater to a customer at wholesale prices, or a jobber who will sell a few tools to a carpenter at a price as low as to the dealer, ought to be made known. We endeavor to avoid buying of such parties.

Another house in the South refers to some goods which they purchased from the manufacturer with the understanding that they should control the trade of their town. Concerning one of the articles in question, which is listed at \$3.75 and was sold to them at a discount of 40 and 10 per cent., they

We learned to-day that a journeyman carpenter ordered from the manufacturers and sells the article at \$2.75, which is \$1 less than we ask, as we try to keep to the company's published list. Our goods, of course, cannot be sold at such prices if we wish to make a living profit. We poor rewish to make a living profit. We poor re-tailers, you see, suffer on all sides—jobbers job us, and manufacturers sell to outsiders. We do not call it a square deal.

THE BAY STATE ARMS CO.

Uxbridge, Mass., issue their 1886 catalogue which is to supersede all previous issues. In it they describe the special features of their leading goods. The following extract from their introductory circular may be of inter-

In presenting for your consideration the various styles of Fire Arms manufactured by our company, we desire to call attention to the fact that the Bay State Rifles and Peerless Target Pistols are the only arms manufactured that have sliding breech block and detachable and interchargeable barrels. We recognize the growing and popular de-mand for Rifles with barrels that can be easily and readily detached for transportation in a Victoria cover, trunk or grip sack, also barrels of different caliber to interchange with same stock. The difficulty in finding a Rifle with just the right trigger pull is entirely obviated by our Adjustable Trigger Pull, which we make on every Rifle. It is a very simple arrangement which allows the resistance of the trigger to be varied from I to 10 pounds almost instantly. It is done by turning a screw, and a pen knife is all the tool required. It works per fectly, and is really better than a set trig-ger. By our patent device the breech block can be adjusted for rim or central fire cartridges by removing one screw. Our regular Rifles are all handsome in appearance, have rebounding lock, pistol grip, rubber butt, case hardened frame and parts, checkered stock, adjustable trigger pull, patent breech block for rim or central fire ammunition.

Are all sighted and centered for shortest

32-40 and 38-55 cartridge for this Rifle, it giving us the best results from our experiments. There is, however, a great diversity of opinion as regards ammunition, and we solicit orders for above Rifle with any weight and length of barrel chambered for any shell in general use. Also extra bar-rels of different caliber to interchange with same stock. Our "Peerless" Target Ristol (new this season) is essentially the same in action as our Rifles. Handsome in appearance, has rebounding lock, beautiful check-ered stock and tip, parts full nickel plated or case-hardened. The extractor throws shell completely from chamber after firing. Barrels are detachable and interchangeable.

During last year the Single Gun trade has doubtless suffered more by severe cuts in prices than any other class of sporting goods. Although we make a reduction in price this year, we shall continue making the "Wm. H. Davenport" Single Gun of the same high order of material and finish as formerly. These Guns have given universal satisfaction in the past, and we have vet to receive our first complaint from them. There are some new features in the con-struction of this Gun which doubtless will commend themselves to the public: ease with which the barrel and f and frame can be put together, simply hooking on the barrel without moving the lever; placing the carridge completely inside the chamber, which prevents any rubbing on the breech when closing the Gun, and when open the shell can be ejected at will by throwing down the lever without the necessity of closing and opening the Gun to do so. It has a double bolt and rebounding lock. The barrels are the best of steel. made here at our factory, and are all choke bored. The Gun complete is a wellmade, strong shooting and handsome arm. Twelve gauge, 30-inch barrel.

ARRANGEMENT OF HARDWARE STORES

A Hardware man in Western New York, referring to his store as well arranged and convenient, describes as follows his method of keeping Iron stock, which may be of service to some of our readers :

I have a set of pigeon-holes 10 in hight and 12 across, 120 in all, 6 x 6 inches in size and 16 feet deep; also two rows of seven each that are 10 inches square, these seven each that are 10 inches square, these last being for Band and Hoop Irons, and the lower ones on the floor. The others, 6 x 6 inches, are above, and will hold about three to four bundles of Bar Iron, arranged as follows: First, Band; second, Hoop; third and fourth, Tire; fifth, assorted Flat Bar; sixth, Stake; seventh, Swedes Iron, Steel Nail Rods, &c.: eighth, Oval: ninth. Steel Nail Rods, &c.; eighth, Oval; ninth Half Oval; tenth, Half Round; eleventh, Round; twelfth, Crowbars, Handles, &c. Commencing at the right hand, we have the smallest size of each kind, and increase the size each pigeon-hole to the left. The stock thus arranged is always convenient to get at, always in order and out of the way, and you can see at a glance when the stock of any size is low. Having to economize room in my business, I have read the articles in The Iron Age and appropriated some of the ideas about store arrangement. I think the articles excellent and very timely, and hope to see more of them.

We have an inquiry from a California Hardware house requesting information as to the best methods of handling certain lines which have not received very much attention in the discussions on the general subject. We shall be glad if the communication calls out the desired information :

There are a few things that we find it hard to keep, and we would like to find out the best method. Wood Planes are one of the most important, and every store carries an assortment of them. They are goods that must be conveniently located, and they take up much room. We are sure every Hardware dealer would like to have suggestions in regard to the best way to manage them. Handled Axes, Drawing Knives and Wire are also goods that take up much room, but we have no doubt there are good ways of keeping them if we only knew how.

SHEFFIELD'S MANUFACTURES.

The following extracts from a letter from a orrespondent in Sheffield, in a recent issue of the London Ironmonger, will be of interest as referring to the questions that are agitating the manufacturers of that town, alluding, as it does, to the practices of which so much complaint has been made of the sending out of inferior and very low grade goods bearnisleading bran

No doubt there is imitation of Sheffield No doubt there is imitation of Sheffield brands, or at least the fraud of stamping "Sheffield" on goods of Continental origin. My opinion, however, is that this is no more prevalent now than 25 years ago. About that time, to say nothing of Solingen and other places where custom had blunted all sense of wrong to the degree that it was all sense of wrong to the degree that it was a mere business courtesy to stamp any name and address required, there was a good Cutlery depot in Paris producing Nowill's, Rodgers's, Wostenholm's, &c., Knives, and in the same locality a File depot, where you could suit your taste with Stubs's, Spencer's or other British brands on goods wholly French (except some of the steel from which they were manufactured). The foreigners now so much more numerously and effectively represented direct in our colonial and other markets that even if custom house officials were less vigilant than for-merly the importation of sham Sheffield goods for re-export can hardly be great, or sufficiently profitable to tempt even a latterday ordinary elastic mercantile conscience to the fraud and lie of declaring such exports

of British origin.' Without for a moment defending these frauds, however, I think it quite possible to exaggerate their effect on Sheffield's trade, and I must sorrowfully confess Sheffield Are all sighted and centered for shortest range needed. All have octagon barrels, 26 inches long, same quality and finish as made for our special high grade Rifles.

Our No. 6 Off-Hand Rifle (new this season), we are confident, will become a general favorite among marksmen. It has all the good points of our regular Rifles, and in addition has selected stock, nickel-plated Swiss hat the labels are desired and the selected stock of the se

grinding, it is also true I have seen others granding, it is also true I have seen others ground within two miles of the Cutlers' Hall, and beautifully marked "Ground in Hamburg." I think it no service to my native town to shirk the fact that the greatest danger to her trade is from the striking advance of legitimate foreign competition and that her most dangerous and veritable enemies are, and have been, those of her own household, so to speak.

Some time ago your correspondent "Trinchante" wrote much with which I cordially agree on this point. I do not go with him in believing that Sheffield would have prospered by resolutely declining all cheap grades; e. g., I fear it will be near the millennium before the bulk of consumers will learn to appreciate a rough-looking, but perfectly-cutting, one blade Knife, such as can be profitably retailed for sixpence, to as can be prohably retailed for sixpence, to a non-cutting flyed, but polished, two-blade, at the same price. But in the formerly im-perfect "goffing," instead of honest hammer and anvil, for saws; in the use of incapable machines, instead of the dexterous hand and wrist of the file-cutters; in the largely developed production of flyed, steam-hammered &c., blades, for even good Knives, instead of the old hand-forged, are to be found the true causes of much lost Sheffield prestige of once famous brands.

So far as Cutlery is concerned, however, I still think much of the best Sheffield make justly maintains its prestige, and for the second-class and inferior grades a little more regard to finish would at present prices secover some trade now taken by Germany, very often with no lower prices or better in-trinsic quality, but merely from pleasing the buyer's eye. I regret I can offer but scant consolation to those who lament the palmy days of Sheffield's unchallenged supremacy all along the line. It is sometimes forgotte that workers in steel and iron, particularly of Cutlery and Tools, were three centuries ago far more numerous and advanced in various Continental centers than in England, and in these days of easy travel and com-munication it is inevitable that the tide of munication it is inevitable that the tide of business should partially flow once again to the cities whence it formerly ebbed. The present greater attention to customers' fan-cies and the lower profits of masters, with better discipline and less wages of the men. will do no more than keep Sheffield well to the front—and by no means always first—in the various races for such honor and wealth as the Hardware trade may still afford. The as the Hardware trade may statistic of the reduced prices and acceptance of machinery and new processes are 20 or 30 years to late to again place Sheffield a distance before all rivals. In many lines 15/ per week would not now retrieve a trade that a generation ago could have been retained by con tent and honest work at 25/ wage.

#### Cutlery Manufacture at Solingen, Germany.

A correspondent of the London Ironmon

ger writes to that newspaper as follows: Solingen cutlery has enjoyed a reputation in Germany and in many parts of the Conti-nent for an indefinite period; but until a comparatively recent date the great bulk of the make has been in the lower grades of quality and in "get up" and finish. To this fact may no doubt be largely attributed the prejudice which exists against German cutlery—a prejudice which has blinded the eyes of English cutlery-makers to the improvements which have taken place within the last 20 years or thereabouts in nearly, if not every, department of a number of German cutlery works. It is old history to refer to the "strike" period which disturbed the trade of Sheffield to such an extent that orders were sent to Germany to be executed as best they could (patterns be ing, of course, also sent) to meet the exigencies of business; and how, too, the German makers "read, marked and inwardly di-gested" the full opportunity thus presented to them of improving their patterns and their modes of manufacture. Yet from the time of that incident in Sheffield's career the makers of Solingen have been slowly but steadily advancing, until now it is quite clear they are, on more grounds than one, enabled to meet many Sheffield makers in the open market. The competition of the Germans in the Australian markets, in North and South America and in other countries has also been familiarized, and the question has from time to time been vigorously discussed. How to meet that competition is a question of the hour, especially if it is granted that a superlative quality is not the The whole conditions and reyears ago. quirements of trade are being revolutionized, and the market does not ask for goods that will last a century, but such that, being of sufficiently good quality, will last a reasonable time. To solve this problem not a few of the German makers have pratically considered their foreign markets, by visiting them and by studying the commercial sys-tems, and also the languages spoken, and if, as one result, they have found it desirable to improve the quality of materials used for certain of their wares, they have made the improvement, and added a style of finish and attractive design which will bear a close inspection.

To this full appreciation of the markets

must also be coupled the methods of manufacture. Of the lower grades and of stamp-ing or "flyed" out blades from sheet steel no criticism is here intended. Such blades occupy a position in the market which may well be left alone; but, as will be seen in went be left alone; but, as will be seen in subsequent paragraphs, the methods of pro-ducing qualities and kinds which are in-tended to compete on equal grounds with Sheffield's good work are such as to account for the po sition the German makers have There are, of course, the impor secured tant questions of rates of wages and hours of labor; but, as it is well known that the rates and hours that prevail in Germany and those in England are very different, and as they involve considerations which in this fitted so that by the force of the blow it is place it is not desirable to canvass, attention moved round a little. Such tangs as are will be confined to manufacturing details, supplemented by the hours of labor and

make a sea voyage for a certain class of ranking with the "little mester" of Sheffield, and, as the principle of subdivision of labor is extensively adopted, much of the work is done in little shops. Among the large and more important makers are the firms of Gottlieb, Hemmesfahr, Hendrichs & Grah, Albert Röttgen, Daniel Peres, H. Böcker and J. A. Henckels. This last named is the largest and in every respect the most prominent firm, and was the subject of some ridicule in the columns of a leading London daily journal at the time the discussion was and, as the principle of subdivision of labor daily journal at the time the discussion was proceeding on the defective swords and bay onets discovered in our army. The name of the firm was not mentioned, but the trade-mark was, that trade-mark being a pair of skeletons joined at the arms and legs after the manner of the Siamese twins. The allegation against the firm's make was that knives of a most inferior character bearing the mark are found in many of the hotels and restaurants of the Continent. To this Mr. Albert Henckels, the works-managing partner of the firm, made reply to the writer: "We make a class of knife to suit hotel keepers, because they will not buy good ones, as they lose so many in the course of a year. But this is not peculiar to us, as I know from my acquaintance with Sheffield, where I lived for a year, that the class of trade is specially catered for. I shall be very happy to show you round our works, and you will then be able to judge for yourself." On the score of importance and size it will perhaps suffice to state that the firm make all their own steel for manufacturing purposes. This example is not copied, it is purposes. This example is not copied, it is believed, by any other cutlery firm either in Solingen or elsewhere in Germany. A shop is also kept for the repairing of the tools and machines generally, and for making certain

Swedish pig and Swedish spiegel is used, nd not the "Swedish" brands made,in Gerand not the many, of which brands much has been heard of late years. For refined steel Steyermark steel is used. There are two furnaces in the steel-making department, and two Siemens generators for making gas with which the furnaces are fed. One furnace is built for 16 pots, and the other furnace for 10 pots. Five castings are made in the course of 24 hours, and the ingots are generally of a size to take two pots. Some ingots, however, require three pots, while on the other hand one pot is sufficient for some kinds. The fuel used in these furnaces is obtained from collieries some 40 miles distant. The firm make collieries some 40 miles distant. The firm make all their own pots at the rate of about 200 per day. This quantity is turned out by the use of a double pot-making machine worked by power and two men. For treating and burning the clay five stoves are employed, while for grinding the material a powerful grinding millis worked. The output of pots is required for use in the works none being sold to the trade. In addition to the daily make, the firm, it was stated, always carry a stock of about 10,000 pots, so as to allow of the requisite seasoning.

For hammering the ingots into bars there are three steam hammers, the largest of

about 15 cwt., but in this proces there is nothing special calling for remark A great feature of these works is that every blade, whether for table knives pocket knives, scissors or razors, is forged pocket knives, scissors or razors, is forged under steam hammers. For table blades about 12 operations are necessary, commencing from the little ingot-like pieces of metal; and for scissors from 6 to 12 operations, according to design and the special quality. Under this style of working there is no welding of the tang and bolster on to the steel blade in the case of a table knife, the whole thing being made from one piece of steel. The modus operandi is, taken altogether, as follows: The bars are cut into certain lengths, and from these lengths the little pieces, which are about 1½ inches long, are stamped out under a hammer which works stamped out under a nammer which works very quickly and can be operated by a boy and a man, the boy working the hammer while the man feeds it. Of these hammers there are now two types in use, the more modern of which is the invention of Mr. Albert Henckels. At the present time there are only a few of these at work, but it is intended to put others down and some were tended to put others down, and some were in course of erection at the time of the writer's visit. One advantage to be derived from this new type is that it will dispense with the boy, the whole machine being under the control of the man. In all, including machines for the blades of pocket knives, there are close upon 80 hammers in use.

As the blade assumes its outline and shap

in the course of hammering, the burr is cur off in machines, and afterward it is finished off under a tilt hammer. Two types of employed, one of the be met with in Sheffield and American factories, and the other quite new, an inven-tion of Mr. Albert Henckels. To work them it is claimed that one-quarter less power is required than is necessary for the ordi-nary make, and that against the one high to which the hammer-head rises above the anvil the hight may be varied in Mr. Henckel's hammer as may be required, and without stopping the hammer should it be undesirable to cease work. The speed at which they run varies from 100 to 500 blows per minute, a simple shifting of the belt on loose pulley being all that is requisite to liter the speed, and by means of a power ful brake each hammer may be instantly stopped. As to their capacity, it is stated that under them a ton of hard steel can be reduced from 2% inches square to I inch square in 10 hours. For drawing the tangs square in 10 hours. For drawing the tangs of kitchen knives, of which knifes the firm make 500 dozen per week, the machine consists practically of a pair of rolls; the lower roll is worked on an eccentric. Between the rolls, by virtue of the eccentric, there is at a certain point of the revolution a sufficient space to allow the tang end of the blade to be placed in between the rolls. In due time the lower roll is brought into contact with the upper roll, whereupon the end of the blade is struck with a blow suffisiently strong to draw it out, especially as the upper roll is not revolved by steam, but riveted through the handles are drilled at the rate of three holes at a time, the wooden or other scales being also drilled in a simi-

and razors the same principle of manipula-tion is carried out, with the addition, in the case of scissors, that the eyes, first formed in outline, are afterward cut out by machines. The marking and the stamping of the name of the firm and the trade-mark are also done by machinery. As to hardening, it will only be necessary to remark that this is done in water and oil, and that the operation is conducted under the direct supervision of the partners.

making tailors' scissors a departure In from the practice common to table blades is made, viz., that, while the blades are of cast steel, the handles are of cast iron. This kind of make forms a considerable item in the firm's working, while other important departments are for shoemakers' and butchers' knives, special machines being laid down for their production. Corkscrews, too, enter more or less largely into the business of the more or less largely into the business of the firm, and every one of them is forged by machinery. Grinding and polishing are conducted very much after the fashion common to this country. All the grinding is done by hand, in the same way as described in previous article on swords. The stones are obtained from Trier. The firm make all their own dies and keep inverse state. their own dies, and keep an immense stock

The large number of logs lying about the yard, and the attention bestowed upon timber mills attached to the works, proclaim the fact that knives with wooden scales comprise an important part of the firm's comprise an important part of the firm's business. But every other kind of scale is also used, from the most common kind to the most expensive; but in regard to these latter the work is not done so much upon the premises, it being chiefly done by men who work outside the factory. But for the knowledge that this outdoor system is carried on some missurphension might.

is carried on, some misapprehension might arise as to the character of the cutlery made. But such a knowledge and a glance around the warehouse will dispel any uncertainty upon the point. It has been often stated that German manufacturers are in the babit of stamping their own cutlery with Sheffield names and Sheffield marks, but it has never yet been said that German makers stamp Sheffield goods with German names and German marks; so that, however skeptical a visitor might be as to the superior quality of work turned out at this factory, the contents of the warehouse bespeaks the character of the work done. The wood chiefly used for the work done. The wood chiefly used for scales is cherry and beech. The logs are first milled up in sawmills of large capacity, the saws for the mills being obtained from Remscheid, and are 4 feet 6 inches in diam-The wood as it comes from these eter. mills is next cut into smaller pieces, and upon a third set of machines into yet smaller pieces of an approximate size to the scale. All the gearing is beneth the floor, and the saw lust is carefully exhausted and carried away. dust is carefully exhausted and carried away. The scales of an ordinary pattern are turned out at the rate per man of 23,000 a week, the entire shaping of the piece of wood, except in the case of carved handles or han-

dles for bread knives, being done at one operation. Smoothing down the handles is also done in one operation. Curved handles are done upon a turning lathe after the fashion of turning gun stocks, and on most of the machines here used two handles are turned at once. Other kinds of handles largely employed are stamped out of metal. Of the shops for the assembling and fitting of parts together, and of the departments incidental thereto, little was noticed that was different to what may be seen in any

good cutlery shops; but the general mechanical appointments of the concern and the disposition of the plant for effective and economical working have evidently been well considered. Throughout the place there are 12 engines and seven boilers. The firm was established in 1840, but the present factory was not erected until 1852. The latter is built entirely of stone and iron, with a view to making it fire-proof. The number of emto making it fire-proof. The number of employees, including those who werk outside, amounts all told to about 1,00. The working hours are from 6 to 12, with half an hour for breakfast at about 8 o'clock, and from 1 to 7, with half an hour for tea at shout 4 o'clock, for six days per week. Taken upon an average the daily carnings. Taken upon an average the daily earnings of men and boys amount to 2/7, but taking the men alone their earnings are about at Berlin. A denied that healthy, and by no means discontented. They are allowed to smoke at their work, a arge numbers avail themselves

Steel and Iron Making in Belgium. The production of pig iron in Belgium in 1884 amounted to 750,812 tons, made up as follows: Refining pig, 547,328 tons; foundry pig, 50,620 tons; manganiferous pig, 5388 Bessemer pig, 130,990 tons, and Gil-Thomas pig, 16.576 tons. In 1883 christ-Thomas pig, 16.576 tons. In 1883 the aggregate production of pig in Belgium was 783,433 tons. The number of work-men engaged in the production of pig in Belgium in 1884 was 3180. The number of Belgium in 1884 was 3180. The number or blast furnaces in activity in Belgium in 1884 was 36, and the number out of blast 25. The quantity of minerals used in the production of pig in Belgium in 1884 was: Belgian minerals, 937 tons; foreign minerals, 1,514,187 tons. The quantity of finished iron made in Belgium in 1884 was 471,040 tons. In 1883 the corresponding production of finished iron in Belgium was In 1883 the corresponding 487,226 tons. The number of workmen engaged in the production of finished pig in Belgium in 1884 was 15,957. The number of iron works in activity in Belgium in 1884 was 75, and the number idle was 14. quantity of finished steel made in Belgium in 1884 was 153,999 tons, Rails, 112,930 tons; tires, 9667 tons; miscellaneous rolled steel, 10,701 tons; hammered steel, 11,036 tons; thick plates, 1848 tons;

tion of steel in Belgium in 1884 was 2508. In 1883 steel ingots were made in Belgium to the extent of 179,489 tons, and finished steel to the extent of 153,301 tons.

#### The First Rail Rolled in Italy.

The most important event during the past month in the annals of industry in Italy is without doubt the production of claim to rank with some or the most ring on to the before-mentioned par-from important in Europe, not only on account ring on to the before-mentioned par-from of their extent, but also from their being ring.

Mr. Brennecke suggests that the adoption of the most ring of which the following is an furnished with machinery of the most modern description for the manufacture of steel rails, armor plates, as well for the production of iron and steel on a large scale.
The new rail mills which were inaugurated at this establishment on May 14th by H. R. H. the Duke of Genoa—brother to the Queen of Italy-are driven by a turbine of 1000 horsepower. The first rail ever made in Italy is of the Vignoles type, 9 m. (29 feet 6 inches) long, weighing 36 kg. per meter (about 72 ½ pounds per yard), and was rolled at a single eat from an ingot of steel.

The new machinery for the manufacture of steel armor plates for the Italian navy is of steel armor plates for the Italian navy in now nearly ready. The establishment is provided with all the necessary plant and appliances for the manufacture of Bessemer and Martin steel on a large scale. The ances for the manufacture of Bessemer and Siemens-Martin steel on a large scale. The motive-power for the works is supplied by the torrent Velino, the water being brought for a distance of 6600 m. (about 4 miles) partly in tunnel by gravitation and partly by cast-iron mains, the water reaching the establishment with a pressure due to a head of 205.7 m. (about 675 feet), where it sup-plies no fewer than 46 turbines and a special apparatus for compressing air, which is distributed by a network of pipes to the various furnaces, hammers, cranes and other

appliances.
The Terni Works have during the last few years secured some large contracts for the supply of cast-iron mains for water works in Italy, among which we may men-tion the whole of the pipes for the water across the plains to Naples are the largest ever cast in Italy. They consist of three parellel lines; the first 27½ inches in diameter and 22 km. (about 13½ miles) in length, part of which is subject to a pressure due to part of which is subject to a pressure due to a head of 18 atmospheres, supplies the upper part of the city, which the two others, which are 31½ inches in diameter and 20 km. (nearly 12½ miles) in length, under a maximum pressure of 10½ atmospheres, supply the lower part. The whole of the cast-iron mains for the Venice water works were also supplied by these works, the con-tract including a length of 4 miles of pipe 311/2 inches in dameter, of which 21/4 were laid under water. The establishment is lighted by electricity by 100 arc lamps and 500 incandescent Crute lamps; installation was carried out by a Turin firm.

#### Construction and Testing of Air-Locks and Shaft-Tubes.

In an article on the subject of construct-ing and testing air-locks and shaft-tubes, by L. Brennecke, published in the excerpt min-utes of the "Proceedings" of the British In-stitution of Civil Engineers, attention is directed to the fact that investigations as to the best methods of designing and testing the apparatus used for sinking foundations under a high air pressure have hitherto not been carried out, notwithstanding the disas trous consequences of an accident. The strains which an air-lock sustains are of a very unfavorable character, owing to the from the bath and treated with hydrochloric vibration caused by the work proceeding in its interior, and the constant changes of the lines of the drawing. It is then washed the interior, and the constant changes of the ines of the drawing. It is then washed temperature and of pressure to which it with water and suspended in a bath of must be subjected when in use. The bursting of an air-lock is instanced where the fractured portions on examination showed a pole now consists of a plate of platinum. highly crystalline structure, although the of men and boys amounting the men alone their earnings are about 4/a day, everything being done on the piece-work system. When the number of stamping hammers made on Mr. Albert Henckel's patent is increased the number Henckel's patent is increased the number of accidents known to have occurred in consequence of the bursting of air-locks in consequence of the bursting of air-locks which has been damascened by hand.

The Solidification of Oxygen.—Proposed in the production of the plate is then polished, and looks like one which has been damascened by hand. tain amount of the home trade and the export trade to North and South America is done from Solingen, but the Russian, Austrian and other Eastern business is carried on from the chief office of the firm, which is As to the workmen, it cannot be third, in 1877, on the Alexander Bridge hat they appeared robust and works, St. Petersburgh, when 10 men were blown into the air and killed and 19 men They are allowed to smoke at their work, a below in the excavating chamber were privilege, if such it may be termed, of which till 12 months later. These three accidents, spread over a period of 12 years, were th cause of a loss of 37 lives, which, compared with the statistics of the results of boiler explosions, show that air-lock accidents are much more disastrous; these considerations led to the conclusion that this apparatus should receive as much attention in the way of periodical examination and testing as applied to steam boilers, an easy matter, as applied to steam coners, an easy matter, as those now engaged constantly in testing steam boilers hydraulically could equally well carry out the testing of air-locks in a similar manner. There should also be rules formulated for enabling the strains upon air-lock shafting, &c., to be ea

Mr. Brennecke intends publishing a series of alculations in reference to the strains upon the various parts of the whole apparatus in an early edition of the Deutschen Bauhand-buch, and he in this paper enters minutely by a series of equations into the question of the strains around the opening made in the wall of the cylindrical air-lock for the door. based upon the principle that a cylinde with closed ends under pressure from within is mainly subjected to two strains, the one  $P \times R$  acting circumferentially and tending to split the cylinder wall vertically, and the second  $\frac{P \times R}{2}$ , or half the intensity of the

turned out to the extent of 1150 tons. The R = radius, from which is deduced that if number of workmen engaged in the producthe frame around the rectangular doorway be of insufficient strength rupture will com-mence at the angles, and he advises, in mence at the angles, and he advises, in all cases with either rectangular or circular doorways, that, in addition to the framing at the side of the door, a ring of flat bar iron of a diameter equal to the diagonal of the rectangular door, and with a sectional area of  $\frac{3}{4} \frac{p \times R \times a}{k}$  (where a = hight of

door opening and k = unit strain), shall be riveted to the wall of the cylinder. This will take the main strains above alluded to. The pressure in addition to the above, acting the first rail in that country. The Terni Iron and Steel Works which are the largest of the kind in Italy, may now upon the back of the door from within outclaim to rank with some of the most ward, may be met by riveting an angle-iron

> certain rules—of which the following is an abstract—with regard to the working of airlocks and shafts might be of service, viz., the iron to be of the best quality, with a tensile resistance of 22.86 tons per inch and 21.6 tons per square inch with and across the fiber respectively; cast iron may only be used for the tubes, which if subjected to pressure from within do not exceed 12 inches—30 cm.—in diameter, and if from without 24 inches—60 cm.—in diameter, and may not be used for those parts subjected to vibration; pipes of brass or copper may not exceed 4 inches in diameter, the coefficient of safety to be at least five times the strain; shaft tubing in calculation times the strain; shaft tubing in calculation to be assumed as subject to occasional pressure from without. A manometer to be provided in each air-lock, also a plate affixed to the latter, giving the name of the manufacturer, the working pressure for which it is calculated, and the date of the trial test.
>
> At every new installation, and also at internals of not more than a received with the content of the co

tervals of not more than 12 months, while in use on the same works, the whole appa-ratus to be tested under a hydraulic pressure of twice the intended working pressure. In testing the full pressure shall be continued for at least 10 minutes without producing signs of weakness by the buckling of plates or escape of water other than in the form of dew. The result of this test to be entered in a register. An air-lock is at the extreme not to be in use for more than 1500 days, and in this amount the intervals between work supply to Naples and Venice, recently completed. The pipes for two great reversed syphons which carry the water of the Serino only in conjunction with the excavating chamber, in which the pressure does not exceed two thirds of that for which the airexceed two thirds of that for which the air-lock was originally intended. As before remarked, after a period of 1500 working days, a lock should not under any circum-stances be continued in use for high-pressure foundation works, and a register should be kept by some responsible person upon the works of the number of working hours and the degree of pressure from day to day. Regarding the shaft tubing, this may be considered serviceable for a period of soco considered serviceable for a period of 5000 working days, and a full allowance made for the hours when not in work, as the strains to which it is subjected are of a less unfavorable character than those sustained by the air-lock.

> Damascening by Electrolysis.—A method of damascening metals by electrol-ysis has been brought out in France. Two copper plates are put into a bath of sulphate of copper solution, one being connected with the positive pole and the other with the negative pole of a battery. A thin layer of insulating varnish or wax is spread over one of the copper plates, viz., that connected to the positive pole, and the damascened device is etched on it. Now, since copper is by electrolysis transferred from copper is by electrolysis transferred from this plate to the other plate, it follows that only the lines of the drawing can be at-tacked. A battery of two cells is sufficient for this purpose. When the plate has been for this purpose. When the plate has been bitten to the depth of 1 mm. it is removed

tion of solid oxygen tion he lately exhibited for the first time to a few friends the method he employs. Last year the professor gave a lecture on liquid ' air, but, although he and other experimenters had made liquid oxygen in small quantity, no one had succeeded in getting oxygen into a solid condition. The successful device employed at the Royal Institution depends upon allowing liquid oxygen to expand into a partial vacuum, when the enormous absorption of heat which accompanies the expansion results in the production of the solid substance. Oxygen n this condition resembles snow in appear ance, and has a temperature of 200 below the freezing point of water. A sup-ply of this material will enable chemists to approach the absolute zero of temperature and to investigate many interesting in the physical properties of bodies under the primordial condition of the temperature of

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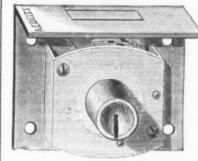
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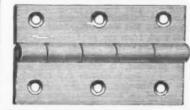


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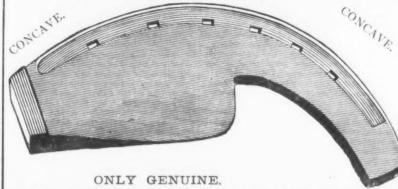


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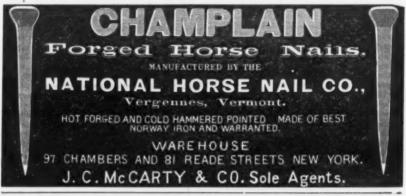
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#### MECHANICAL.

Lost Energy.

Writing in the London Engineer some time ago, Prof. R. H Smith referred in an interesting manner to the much-discussed subject of lost energy. Without entering into the mathematical portions of his articles, the following extract will be found to suggest a number of things worthy of thought. Pro-

fessor Smith says :
We know that the ultimate useful resulting work done by our engines is never more than a comparatively small portion of that we are compelled to make our steam do in the cylinders. In an engineer's machine shop the useful work done is that of cutting shavings off various pieces of metal and other substances, and is at each machine tool measured by the product of the pressure on the tool point by the length of surface cut. If the useful work so done amounts to a quarter or one fifth of the indicated power of the driving engines, the arrangements would be considered fairly satisfactory. In a spinning mill the useful work done consists in teasing out and twisting series of fine fibers, and we do not suppose that this final mechanical work done on the fibers amounts to more than a very small percent-age of that done by the steam in the cylinders. In these and similar cases we are accustomed to satisfy our mechanical consciences -how guilty must we not often feel when we go on glibly proclaiming with unabashed boldness the "grand doctrine of the con-servation of energy!"—by considering that the gearing between the driving piston and the final work is necessarily very complex, that it unavoidably involves a very large number of frictional rubbing surfaces, and that, therefore, a very large frictional waste of power cannot be helped. But since Professor Thu ston's experiments were first published we know that the coefcients of friction at fairly lubricated journals are far smaller than they were formerly believed to be, and that in point of fact they are so minute that they will not help us to account for nearly all the power that we see continually disap pearing we know not where from our work shops. Again, consider the case of a marine engine. Here the mechanism between the engine and the useful work done is extremely simple and direct, involving a very small number of frictional joints. Yet here, as is well known from Froude's experiments, the actual work done in hauling or pushing forward the sbip through the water bears only a small proportion to the indi-cated power developed in the cylinders. Here, besides the frictional losses, we know of a large amount of energy thrown into the stream of water that the propellors have to discharge backward from the ship, because the screw does not gear in a solid nut, nor the paddle-wheel in a solid rack, which do not budge in obedience to the pressure put on them; the only abutment for the forward thrust on the sbip is obtained in the resistance to backward acceleration of momentum offered by the water that is continually being thrown violently sternward. The screw-blades also, not being perpendicular to the line of motion, throw the water sidewise and give it rotational or whirlpool motion, besides the absolutely necessary backward motion. But if we calculate lib eral allowances for these evident losses there remains a large portion of the total loss known to exist by direct experimental evidence still to be accounted for.

onsists essentially in a periodic alternation of the condition of stress and strain in the mass vibrated. The vibration may be rapid, as in the "chattering" of a badly clamped tool. Throughout every part of an engine, including its frame and bed-plate, there are an alternation and succession of changing stresses and strains, the full period of which coincides with that of the revolution of the crank-shaft. In a driving belt the period of the vibration is still plates filled with dogwood plugs, with the period of which coincides with that of the revolution of the crank-shaft. In a driving belt the period of the vibration is still slower; it is the time occupied by any one part of the belt in traveling from a definite position, say, on the tight side round the driving pulley, along the loose side, over the loose sid

material the strain is caused. For instance, if a certain length of belt be stretched by a This hand wheel, the levers for changing force gradually increasing from O up to T, and the effect be to stretch it a length, say and the effect be to stretch it a length, say

CT, proportional to the force, then, since the average force is ½ T, the work done in stretching is ½ C T<sup>2</sup>. In passing from the lose side, where the pull is, say, T, to the light, and they overhang the ends of the baryings which letter are salf-ciling. The loose side, where the pull is, say,  $T_2$ , to the light side, where it is, say,  $T_1$ , the work done in increasing the stretch would then be  $\frac{1}{2}$  C ( $T_1^2 - T_2^2$ ). Similarly in every other case of increase of strain we can calculate the control of the wheel are of bent ash, strong and light, and they overhang the ends of the bearings, which latter are self-oiling. The overhanging feature is quite important, effecting as it does the same result that case of increase of strain we can calculate the amount of work done against the elastic and inelastic resistance to deformation. I am far frem saying that the whole of work so done is lost. If it were so the efficiency of our machines would be even less by a good deal than it is. But a large part of it is lost. On the other hand, in some circumstances, nearly all of it is recovered in the shape of usefully performed work during that period of the vibration in which the piece is being unpresented in the shape of usefully performed work during that period of the vibration in which the piece is being unpresented in the vibration in which the piece is being unpresented in the variations of length due to the length due to the vibration of the vibration in which the piece is being unpresented in the variations of length due to its length due to the variations of length due to its length due to the variations of length due to its length du strained again. Different members of a when a chip gets between the saw and the mechanism are very differently circum- wheel, the result being a broken saw. To stanced as to the recovery of this strain provide doubly against such an accident a energy. I notice, first, that in order that wooden block is so fitted in the throat bethere may be a possibility of its recovery tween saw and wheel as to catch all chips the atrain must be an elastic one. So far as the strain is inelastic, the work spent in producing it is always absolutely lost without accumulations of sawdust by a scraper and possibility of recovery. The bending of an iron or steel rope is about three-fourths box shaped casting in one piece, very strong the strain in the company of the strain in the strain in the strain is a strain in the strain in the strain in the strain is strain to be strain in the strain to strain the strain in the strain to strain the strain in the strain that is the strain that it is the stra

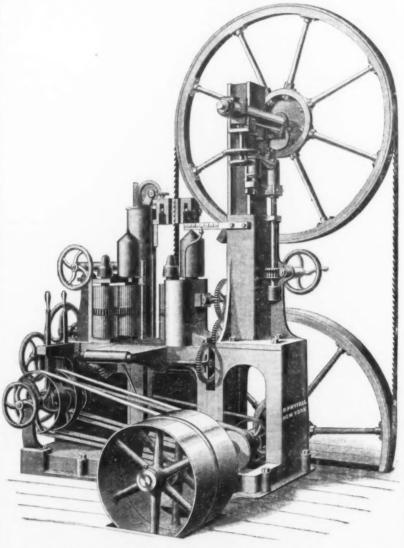
unstrain it—to straighten it out from the bent condition—as it did to bend it. Although the strain be wholly elastic, or nearly so, it by no means follows that the work periodic-ally spent in producing it is wholly or even partially restored during the unstraining intervals of the vibration

New Resawing Band-Saw Machine.

We show in the accompanying engraving new resawing band-saw machine. built by P. Pryibil, 461 West Fortieth street, New York, and which presents several features of interest to wood workers. The machine, according to the builder, will saw from 12,000 to 15,000 feet per day of decection of malt also corrodes in 10 hours, making a kerf of only 16 inch or disengagement of hydrogen; but g less, and getting from 1-inch stuff, two and mannite are without action pieces thick, enough to make two \( \frac{1}{8}\)-inch panels after being planed on both sides. The importance of this point, especially when costly woods are used, is apparent. The feeding is effected by four strongly-

#### The Corrosion of Boilers.

MM. Klein and A. Berg have been study ing the action of sugars on the corrosion of boilers, and find that sugar in water has an acid reaction on iron which dissolves it, a disengagement of hydrogen. quantity of iron dissolved increases with the proportion of sugar in the water. The salt of iron formed is the acetate. A neutral decoction of malt also corrodes iron with disengagement of hydrogen; but glycerine metal. These results are worthy of note in sugar refineries and places where sugar sometimes finds its way into the boilers by means of the water supplied. menters in question also find that zinc is



NEW RESAWING BAND-SAW MACHINE, BUILT BY P. PRYIBIL, NEW YORK.

dence still to be accounted for.

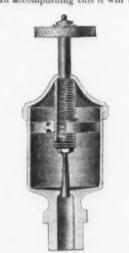
My present object is to point out one way in which undoubtedly a considerable quantity of energy is wasted—in many cases, I fear, it is a very large amount. This source of loss may be shortly described by the one word "vibration." The vibration may be either slow or rapid. A vibration consists essentially in a periodic alternation of the condition of stress and strain in the or bottom of these rolls can yield independ on the first pair of live rolls, and until the first pair of the cut. Strong springs behind each of the bearings of the two feed rolls at the left of the saw hold these rolls up to the work and enable them to yield to all inequalities in the stuff. As either top or bottom of these rolls can yield independent of the declaration of the condition of stress and strain in the latter being so arranged as to guide the latter being so arranged as to guide the latter being so arranged as to guide the latter being so the stuff after it has passed the first pair of live rolls, and until the finish of the cut. Strong springs behind each of the two feed rolls at the left of the saw hold these rolls up to the work and enable them to yield to all inequalities in the stuff. As either top or bottom of these rolls can yield inde-

riving pulley, and back to the original sideways as they become grooved from use, position again on the tight side, which period is evidently the whole length of the widths of saws, and are provided with selfbelt, divided by the speed at which it runs.

Now, work is always spent in producing any sort of strain in whatever kind of post, and is geared to a hand-wheel, by

The upper shaft can be angled while the wheels are in motion. It is carried on a slide cushioned upon an adjustable spring which maintains a proper tension on the saw throughout all variations of length due to

and fitted with a piston. The discharge opening is reduced at its upper end, and the operating stem is provided with a finger wheel. The lower end of this stem is ta-pered, the taper being made to agree with the varying amount of compression on the spring, so that the amount of grease delivered in the discharge opening may be uni-In accomplishing this it will be seen



Automatic Grease Cup, Made by the Walker Mfg. Co., Cleveland, Ohio.

that the stem and spring are inversely re-Thus, when pressure is put on the lated. grease, the spring is compressed, and the stem rising in the dischar ge opening closes the opening in proportion as the pressure is inreased. Increasing the amount of pressure engthens the time of automatic operation, and does not make the grease flow faster, as at first may be supposed. Should it be neces sary to give an extra amount of grease at any time to a bearing, it is only necessary to press down on the finger-wheel. This does not in the least interfere with the automatic orking of the cup.

are furnished, and every machine is tested traveled the length of the taper the finger- inch uprights 16 feet long, the will of the operator. Crank and cross-head pins, pitmans, loose pulleys and other

#### An Electric Traveling Crane.

able gearing, it can be made to hoist the load, advance the crane on the rails, and operate the jib. The current of 15 ampères, with an electro-motive force of 250 volts, is conveyed to the crane by overhead sliding contacts from the generator, which is a borse power Gramme dynamo running at in 18 or 20 hours, now with this electric crane four men can do the same amount of work in three hours.

#### Gumming Saws.

Emerson Smith says that many persons who are not fully acquainted with the prin-ciple upon which circular saws are made entertain the erroneous opinion that a saw should work the same until worn out, if it is not accidentally sprung in use or strained in gumming. So far as any damage to the saw is concerned, there is no difference between the use of a burr gummer or a file; but if proper care is not exercised in the use of the emery-wheel there is more danger from its use than from either the file or burr. If the condition of the saw is such that a considerable depth is required to be cut into the plate, the operation should be performed by going over the saw several times, only allowing the wheel to grind away so much as can be done without heating the saw to a blue. blue. There is no excuse whatever for crowding the emery-wheel so as to heat the saw red hot, as this is sure to injure the saw, often glazing it where the wheel comes in contact so hard that a file will make no impression whatever. From these hard spots on the outer surface small cracks comnence, invisible at first to the eye. but gradually enlarging until they become dangerous fractures. Hacking the face of the wheel with a cold chisel or the corners of an old file will often prevent its glazing, so that it is not as lightly to be at the is not as liable to heat the saw. After a few times gumming, however, the saw will en-large on the rim, so that the slightest warmth will cause it to buckle, and there is no remedy left but to send it to a saw-maker and have it rehammered. Some, however, entertain the erroneous impression that a saw rehammered will never run as well as when new. On the contrary, a saw reham-mered will generally run better than when new, because all the elasticity, or nearly all, is worked out of the saw by using, and it generally works stiffer than when new

#### A Novel Chimney Staging.

In a paper read at the recent Chicago meeting of the American Society of chanical Engineers, Mr. Frederick G. gin, of Lake Linden, Mich., supplied the following interesting account of a novel chimney staging

house for their stamping and concentrating works at Lake Linden, Mich. It was 206 inch, the third 1/4 inch, the top three courses 3/6 inch thick. The late arrival of the material for the chimney, with other circuming II men, went to the top with no trouble stances, brought the commencement of its whatever, the operations following each erection rather late in the season, so that it other in rapid succession, and within 27 became a serious question as to whether it could be completed in time to allow the brick lining to be put in before the freezing at the top, including the hanging of three weather set in. In fact, it became evident sets of guys, and painting the chimney in that with the ordinary method of staging it side and out. A cast-iron capping having could not be done. Such a steging would been put in place, a permanent iron ladder have required 10 uprights of 8 x 8 inch was hung from top to bottom. The cages timber, with the bracing necessary to hold were then lowered to the ground and the them in position, and girting, and provision for a platform every 5 feet-i. e. for every course—sufficiently strong and wide to allow the workmen to stand outside for holding rivets and bolting together, all requiring not less than 26,000 feet of lumber.

Such a staging would have to be put up in ections, during the operations for which the ironwork would have to be suspended, and the time put upon the staging and plat-forms would be nearly as much as that for putting the plates in position and riveting, and the expense full as much. But, regard-less of the question of extra cost, the delay inelastic, from one tenth to three-eighths and rigid, and it insures the permanent only being an elastic strain. Probably more than one-half of the bending strain of a leather belt is inelastic, while the direct ten sion strain in the belt has probably a large fraction of it elastic So far as the inelastic strain is concerned, it takes as much work to

suitable before leaving the factory. The weight of machine complete is about 6000 pounds, and the hight of stuff that can be sawed is 30 inches.

The weight of machine the taper the taper the magninoperated to bring pressure on grease by piston moving down on thimble-form at the bottom, one about 4 feet form at the bottom, which carried the working the form the bottom and the form the for carrying the forge, &c., the platforms being indicated by the letter P. Upon the moving parts of machinery can be lubri-cated by this grease cup without the incon-venience of oil being thrown around.

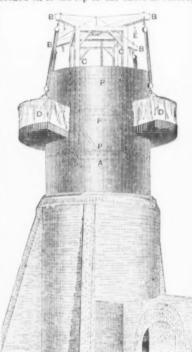
top of this frame were four arms, B, jointed at the center, through which it was bolted to a cross girt, but so as to allow it to swing at the center, through which it was bolted to a cross girt, but so as to allow it to swing To the ends of these arms were sus An electric traveling crane is now at work

An electric traveling crane is now at work

An electric traveling crane is now at work

shown. These cages extended a little more at the warehouses of the Compagnie des Entropots et Magasins Généraux, at Roubaix, consisted of a segmental platform about 3 tropots et Magasins Généraux, at Roubaix.
France. At these warehouses the cotton bales arriving mostly from America and La Plata are stored before being forwarded to the different entering mostly from the wind, and prevent the possithe different cotton mills. On account of the great fire risk no steam crane is allowed quired less than 1000 feet of lumber. The the different cotton mills. On account of the great fire risk no steam crane is allowed in the establishment, and the bales, which weigh about ½ ton each, had until recently to be hoisted and handled generally by to be hoisted and handled generally by manual labor. This work is now accomplished by a traveling crane worked electrically. The crane post is placed on a trolly which runs on rails, and a rail fixed to the ceiling of the warehouse guides the upper end of the post. The jib of the crane has a derrick motion. A small Gramme 4-horse-power dynamo is fixed on the trolly. This is always kept running (900 revolutions per minute), and, being connected with suitable gearing, it can be made to hoist the load, advance the crane on the rails, and the trolly handle gearing, it can be made to hoist the load, advance the crane on the rails, and the first two courses were raised into place with a "gin pole" and bolted together. Two snatch blocks were then hooked on to the upper sheet near the two opposite corner posts of the frame, at the bottom end of which were eye bolts, into which were booked the hoisting ropes, which passed up through the blocks and down to the bottom through another pair of blocks on to the through another pair of blocks on to the drum of a small steam hoisting machine.

The temporary platform was then re-moved, and the frame was raised high enough so that the two sticks of timber A 1200 revolutions per minute. The commer cial efficiency of this arrangement is stated to be 60 per cent. It shows, however, an and the two courses were rised and the two courses were rised and the two courses were rised. to be 60 per cent. It shows, nowever, an economy in working, for, whereas formerly in men were required to handle 150 bales third course was put in place by the method to be used from that point to the top, the course was put in place by the method to be used from that point to the top, the course was put in place by the method to be used from that point to the top, the course was put in place by the method to be used from that point to the top, the course was put in place by the method to be used from that point to the top, the course was put in place by the method to be used from that point to the top, the course was put in place by the method to be used from that point to the top, the course was put in place by the method to be used from that point to the top, the course was put in place by the method to be used from that point to the top, the course was put in place by the method to be used from that point to the top, the course was put in place by the method to be used from that point to the top, the course was put in place by the method to be used from that point to the top, the course was put in place by the method to be used from that point to the top. In the arms B, just back of the eye bolts to which the cages were suspended, were other ye-bolts, E, into which was hung a snatch block, over which was passed a rope leading from the hoisting machine, and hooked into the sheet upon the ground. As the sheet was raised the cage was swung out to allow it to pass up behind it, the sheet swinging naturally and easily into place, where it was secured with bolts. When the whole c When the whole course hooked on to the top of the sheet as before,



A Novel Chimney Staging.

and the frame raised as before, so that the In the fall of 1885 the Calumet and Hecla loose cross-beams A could be laid in the Mining Co. completed a new brick boiler-bouse for their stamping and concentrating bolted in place at the horizontal seam, and works at Lake Linden, Mich. It was 206 from this point up the frame, except when it feet long and 70 feet wide, giving room for was being raised, was resting upon the two 14 fire-box boilers, whose shells are 90 inches in diameter, with a total length of 34 of which there were two sets, so that while feet. The chimney designed for this boilerhouse was to be of wrought iron, 13 feet
7 inches in diameter and 165 feet high,
above the brick base upon which it
stood, and the top of the latter was 20 place ready for riveting, but a few moments feet above the ground, making a total hight of 185 feet above the surface. The courses raise the frame, transfer the cross-beams A feet high, with four sheets in each to the next set of stirrups and drop the the ends and edges butted together, frame on to them. The sheet being riveted the joints being covered with straps riveted one-quarter round on the opposite sides, the to the sheets on the outside. The first 10 cross-bars B were swung so that the cages courses were 3% inch thick, the second 18 covered the other two quarters, and the riveting was completed.

In this way, this traveling staging, carry frame taken apart and dropped, two pieces of timber being laid across the top, from an eye-bolt in which were hung blocks and falls for the purpose of raising a platform which carried the masons and material for putting in an 8-inch lining, which was done in about 20 days. The blocks were then lowered and the cross timbers dropped, and a completed chimney stood as a testimonial of the quickest time on record for such a job. The total weight of the chimney, including the base, ring and cap, is 100,105 pounds. The cost for the labor, including punching and rolling the sheets and straps

Justas Ch

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# ware Prices, June 23, 1886.

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Reove	770 45	2222
Plow   dis   Am. S. Co. Stove, Annealed   dis   Am. S. Co. Stove, Annealed   dis   Am. S. Co. Stove   dis   50   R. B. & W   Plow   dis   50   R. B. & W   Stove   dis   75   60   76 & 10   Bolt Ends   dis   75   60   76 & 10   Borax   Berax   Bering Machines   Without Augusts   Unright   Angular   Without Augusts   Unright   Angular   Machines   Without Augusts   Unright   Angular   Machines	&5 % &5 % &5 %	AAAC
Borna Machines. Upright. Apgular. Without Augers. Upright. Apgular. 5.50 Snell's Rice's Patent. 5.50 6.75. dis 40 & 10 & 10 & 10 & 10 & 10 & 10 & 10 &	50 % 10 % 10 % .net .net	ORV8
Bumason. Beckley & Co.'s, Nos 1 and 2— discrete & Co.'s other Nos. dis 70 @ 50&10 discrete & Co.'s other Nos. dis 70 @ 70& sargent & Co.'s	10 % 10 % 10 %	E SE
Backus, Nos. 110 to 114 and 31 to 33. dis 60&5@60& Backus, Nos. 6, 8, 12, 14 dis 60&106 Backus, Nos. 16, 18, 20, 29, 7, 9, 11 dis 70&106 Barber's, Nos. 10 to 16 dis 70&10 Barber's, Nos. 30 to 33 dis Barber's, Nos. 40 to 63 dis 50&	10% 25% 50% 50%	BATT
	10 % 10 % 10 % 10 % 1.50	CBBBBB
Humason, Beckley & Co.'s, Nos 1 and 2—  dumason, Beckley & Co.'s other Nos. dis 70 @ 70&  Sarkent & Co.'s	10 % 15 % 15 % 10 % 2.10	EOJ.
S. & W.   S.   S.   S.   S.   S.   S.   S.	10 %	BLABS
		Bi W
Broliers	5 %	Gi Ci Ir
2201100	- 1	Bi W
Wrought Brass	0%	L
Lone Joint . Lone Joint Japanned . Lone Joint Japanned . Lone Joint Japanned . Mayer's Hinges . Lone Fin Acorns . & 10&5 \$ Lone Fin Acorns .	70	To Gr Be W
Loose Pin, Acorns, Japanned Loose Pin, Acorns, Jap, Pitd.Tips  rought Iron- Past Joint Narrow	2 %	Ge Sta Vi Ch Ph
Cast Brass. Loose Joint dis 33\\\2\chi 10\\2\chi 13\\2\chi 17\chi 16\chi 16\chi 33\\2\chi 10\\2\chi 18\\2\chi 16\chi 33\\2\chi 10\\2\chi 18\\2\chi 16\chi 36\\2\chi 36\2\chi 36\2\chi 36\2\chi 36\2\2\chi 36\2\chi 36\2\2\chi 36\2\2\chi 36\2\2\2\2\2\2\2\2\2\2\2\2\2\2\2\2\2\2\2	1	Ru He Sh Ell
	2 % 2 % 2 % 2 % 2 % 2 % 2 % 2 % 2 % 2 %	Ne Me Wi L.
1.00   1.00	****	Ad W1 Bla Bla Bre
50. dis 75±10 a 80 bepard's Champion Gravity, No. 75. dis 80±56:5 bepard's "Gravity." Nos. 1. 3 and 5 bepard's Steamboat Gravity, No. 1. 0. dis 80±10±25 bepard's "O. S." and "Acme" Luli & Porter dis 75±10±10 dis 7	MARKE WAR	Bre Bre Bre Ba Ba Ba
25. 3	S P	lai lai Vh
Bucher's Cleavers	\$ 2 \$	S S S S S S S S S S S S S S S S S S S
alipers.—See Compasses.	M	loi
P dos 25/6, d3/15/6 (2)	TANKAKA T	E
seenger's Comet         \$\psi\$ dos \$8.00, dis \$25 ericsas           plex         \$\psi\$ dos \$25\$, dis \$15 @ 20           man's         \$\psi\$ dos \$8.25, dis \$50 @ 60           4. French         \$\psi\$ dos \$2.25, dis \$50 @ 60           5. Iron handle         \$\psi\$ dos \$2.25, dis \$5 @ 60           reks         \$\psi\$ dos \$2.50, dis \$6 @ 50           reks         \$\psi\$ dos \$2.50, dis \$6 @ 50           raue         No. 1. \$2 ; \$2.25; \$, \$2.50. dis \$6.00, dis \$2.65           rid s         Best. \$\psi\$ gross, No. 1, \$12.00 \cdot No. 2, \$24.40; \text{circles in \$10.01} \text{circles in \$10.01\$ \text{circles in \$10.01} circles in \$10.01\$ \text{circles in \$10.01\$ \text{circles	N KATAA	ta:
Implo	A A K	FY YE E
t Iron, Steel Points. \$\P\$ dos 80 ket ket \$\P\$ dos 11. ard s. dis 25 \( 25\) \$\p\$ 1 arg et \$\P\$ dos \$17.0 ket ket \$\p\$ dos \$17.0 ket \$\p\$ dos \$17.	6 10 W	上刀

	vale filles,	
h.	Mystic	,00 ,00 ,00
×	Queen, with band	00.00
N. A. N.	Cog Wheel. \$\varphi\ \dot \dot \dot \dot \dot \dot \dot \do	00.00
XXXX	Casters   Bed   dis 60 @     Plate	5 %
XX	Deep Socket	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
XXXt	Favson's Anti friction	10
ttt	Humason, Beckley & Co.'sdis 78   Sargent'sdis 66% & 10   Hotchkiss	***
00	Chain.	0
K	Log, Fifth, Stretcher, and other tancy Chains, list Nov. 1, 1884	% 0
***	American Coil, less than cask lots, add ¼€ ₹ Ђ. German Coil, list of June. 1881	***
	Meneely's Breast, Halter and Hitching. dis 50&10 Meneely's Pat. Sleeve-Snap Breast. dis 50&1 Onelda Halter Chain (old flat). dis 45 Galvanized Pump Chair.	MONN
-	Jack Chain, Iron	N.W.
	Red	0000
-		
	Cherry Seeders.   \$\psi\$ doz 8   Chisels.   \$\psi\$ doz 8   Chisels.   \$\psi\$ Chickles.   \$\psi\$	N. W. W. W.
	Merrill	% % 0
-	Tanged Firmers, Spear & Jackson's	2 2
	Adjustable, Lambert's dis 20 Adjustable, Snow's dis 40&5 Adjustable, Hammer's dis 15 Adjustable, Starret dis 15	***
	Tanked Firmers, Buck Bros. dis 30 Clamps. Providence Tool Co.'s Wrought Iron dis 25 Adjustable, Gray's dis 20 Adjustable, Lambert's dis 20 Adjustable, Lambert's dis 20 Adjustable, Snow's dis 40&6 Adjustable, Stearns' dis 20&10 Catinet, Sargent's dis 66%, \$610 Catinet, Sargent's dis 66%, \$610 Warner's, Mars. dis 40&6 Warner's, Mars. dis 40&6 Warner's, Sargent's dis 40&6 Warner's, Sargent's dis 40&6 Warner's, Sargent's dis 40&6 Clips. Clips.	N M M M
	Saw Clamps. See Vise Citps. Axle and Spring Bar, Norway Iron. dis 65&2 9 Common Axle Clips. dis 70 9	
	Common Axie Cips	800
	Hardware list	
	The "Swift," Lane Bros	
	Concern   Miles     Poard and Box   dis 45&10&2     Solson's Patent   \$0.50, \$10.50, dis 25     American Enterprise Mfg. Co dis 20&1060     The "Swift," Lane Bros   dis 20&1060     Compasses Dividers & Co.     Compasses Dividers & Co.     Compasses Calipers   dis 70@70&10     Bemis & Call Co. 's Dividers   dis 70@70&10     Bemis & Call Co. 's Compasses & Calipers   dis 50&5     Bemis & Call Co. 's Compasses & Calipers   dis 50&5     Bemis & Call Co. 's Compasses & Calipers   dis 50&5     Bemis & Call Co. 's Couper   dis 50&5     Bemis & Call Co. 's Call's Patent Inside   dis 30     Receisior   dis 50     dis 50     dis 50	
	Bemis & Call Co.'s (Call's Patent Inside)	
1	Excelsion - Call Co. (Call's Patent Inside) - dis 30 g  Excelsion - dis 50 dis 50 g  Cook Extension - dis 20 @ 2045 g  Listerens & Co. a Calipers and Dividers - dis 20 @ 2045 g  Coopers' Tools - dis 20 g  Barton's - dis 20 g  Barton's - dis 20 g  Excelsion Mfg. Co - dis 30 g  Excelsion	
1	Albertson Mig. Co.   dis 25 %	200
1	Sandusky Tool Co.       dis 30 @ 30&5 \$         Corkscrews.       dis 30 @ 40&5 \$         Humason & Beckley Mfg. Co.       dis 40 @ 40&5 \$         Llough's Patent.       dis 33½ @ 33½ & 33½ & 5         Gover & Hulbert.       dis 35 \$         Corn & Inives and Cutters.       dis 10 \$         Wadsworth's.       dis 25 \$         Cradles.       dis 25 \$	1
1	Wadsworth's	7
-	Ast steel Points.	1
A 100 MA	Cradies.    Cradies	
EVI	Cutlery. leaver Falls and Booth's. dis 334 \$ Vostenholme. \$7.75 @ \$8.00 to £	1
EL	Dividers	
TG	Trass, Pope & Stevens' list	
EP G&P	TRASE, PODE & Stevens' list	
CRCR	namion (Cou)	
8.	haw Door Check and Springdis 25 @ 30 @ 35 \$	
PAM	Illott's Door Check and Spring	BBS
LBAR	Fatrous.       dis 15&10 @ 25 \$         & I. J. White       dis 20&5 \$         radley s.       dis 35 \$         djustable Handle.       dis 20 @ 25 \$	OHUU
BBB	Drilis and Drill Stocks. lacksmiths'	RCCZB
BIBIBI	Drill sund Drill Stocks	RCS
RRR	atchet, Ingersoll's	K
R	stchet, Moore's Tripie Action	Ci
T	utomatic poring roomeach, \$1.70 @ \$1.80 cist Drille— Morse	Al Ec
- 7	Syracusedis box 10 s	La Ti W St
Me	Cleveland	Fa Al Ri Pa
Pe	Dripping Fans.	AI
in its	Ministra	Ju Fi
Ad Ad	andaru	Sa Ge Co Co
,	Emery. No. 4 to No. 54 to Flour, CF.	Co Co Me Me
6		Me

vull Gill Halu	valt illuto,	Julio 20, 1000
Belting, Rubber.	Mystic # doz \$1	7.00 Faucets.
Classic   Constant	Garland   # doz \$15	Hand
	King   # doz \$30   Weed Improved   # doz \$18   Hub   # doz \$16	.00       Frary's Patent Petroleum.       dis 40&10&2         .00       West's Patent Key       dis 50         .00       Anchor Lock.       dis 45         .00       Metallic Key, Leather Lined.       dis 55&10 @ 60&10         .00       Metallic Key, Leather Lined.       dis 55&10 @ 60&10
Hotehkis's # doz \$5.00—dis 10 @ 10&10 Weston's, per doz No. 1, \$10: No. 2, \$9. dis 25&10&5 Meofill's # doz \$3—dis 10 Morrill's # doz \$9—dis 50  Bit Holders		J. Sommer's Best Block Tin Key. dis 70 @ 70&10 J. Sommer's Cork Lined, 1st quality dis 50 J. Sommer's Cork Lined, 1st quality dis 50
Morrill's	Custers.  Bed	Metallic Key, Leather Lined.   dis 55&10 @ 60&10.
Domestic per dos \$3.00—dis 3314	Yale, Gemdis 60@60&	os Felioe Plates. W D 6 @ 6%
Blind Fasteners. # doz pairs, \$1,00—dis 20@20&10	Martin's Patent (Phoenix)   dis 45&10 @ 5     Payson's Anti friction   dis 6     "Giant" Truck Casters   dis 10 @ 10&     Stationery Truck Casters   dis 10 @ 10&     Stationery Truck Casters   dis 10 @ 10&     Stationery Truck Casters   dis 10&     S	0 %     Best brands, list Dec. 1, 1885dls 55&10@55&10&55       0 %     Lower Grade, list Dec. 1, 1885dls 60&10&10&50       5 %     J. B. Smith Co. Screw Tang
### 4002 \$40.00—418 002.00.00  #############################	Cattle Leaders. Humson, Beckley & Co.'s dis 78 Sargent's dis 66%&E1 Hotehkies dis 30	New Am. File Co. Pat. Tapers   dis 50
DIA-A G.	that-	Moss & GambleList April 1, 1883, dis 15 ButcherButcher's list, dis 20
Blocks.  Blocks.	Trace 7-10-9 Pag stars	Fluting Machines.  Knox, 44-inch Rolls
Cackle Blocks, &c. list April 17, 1885 dis 50 @ 50&10   Reca Mfg. Co. Self-Lubricating	Nov. 1, 1884. American Coll 3-16 34 5-16 34 7-16 36 36 14 1to	Eagle, 34-inch Roll. \$2.15, dts 35 0
Noor and Shutter   Square, &c.   dis 70 @ 70&5	American Coil, less than cask lots, add 42 % %. German Coil, list of June, 1881	Crown Jewel. 6-1n, \$3.50 each, dls 35- American, 5-in., \$3.6-in., \$3.40; 7-in., \$4.50 each, dls 35- Domestic Fluter \$1.50 each, ne
Ives' Patent Door Bolts         dis 55 5           Wrought Barrel         dis 70 @ 70&5 5           Wrought Square         dis 70 @ 70&5 5	Covert Halter, Hitching and Breast dis 50&: Covert Traces dis 40&: Meneely's Breast, Halter and Hitching dis 50&16 Meneely's Pat Standard Hitching distance	<ul> <li>Crown Hand Fluter, Nos. 1, \$15; 2, \$12.50; 3, \$10.dts 30;</li> <li>Shepard Hand Fluter, No. 85</li></ul>
Wr't Shutter, Brass Knob, Stanley's	Covert Flater, Hitching and Breast. dis 50&1 Covert Traces. dis 40&2 Menneely's Breast, Haiter and Hitching. dis 50&1 Menneely's Breast, Haiter and Hitching. dis 50&1 Menneely Brat. Sleeve-Snap Breast. dis 50&4 Gel Galvanized Chain (old list). \$\text{\$\te	Clark's Hand Fluter, No. 90.
Wrought Shutter, Sargent's list dis 60&10 of Wrought Sunk Flush, Sargent's listdis 50&10 of Wrought Sunk Flush, Stanley's list dis 40&10&6 of Wrought Sunk Flush, Com'n Stanley's list dis 50&10 of Garrage—	White 99 5	Fluting Scissors   dis 45   Fly Traps   Paragon   P doz 8   Balloon   P doz 8   Forks   Paragon   P doz 8   Forks   P aragon   P aragon   P aragon   Forks   P aragon   P aragon   P aragon   Forks   P aragon   P aragon   P aragon   P aragon   Forks   P aragon   P aragon   P aragon   P aragon   P aragon   Forks   P aragon   P ar
Com. list June 10, '84 dis 75&10&5 @ 80&5 @ Genuine Eagle, list Oct '84 dis 75&10 @ 75&5 \$ Philla. pattern, list Oct. 7, '84 dis 75&10@ 75&10&5 R. B. & W., old list dis 70&5 \$ 0&5 \$ 0.5 \$ 0	Blue \$\pi \text{gro 9}\$ gro 9\text{White Crayons} \$\pi \text{gro 12c} \text{@ 12b}\$	Forks.
Common, list Feb. 28, 1883	Cherry Seeders & doz	Plated, see Spoons. Freezers, Ice-Cream. Leading Goods
P.C.B.&N.Co., Keystone, Phil. list. Oct. 84dis 82% %	Socket Framing and Firmer-   Witherby and Douglas	Plated, see Spoons   Freezers, Ice-Cream   Leading Goods   G
Am. S. Co., Norway, Phil., list Oct. 16, 34, dis 80 5 Am. S. Co., Eagte, Phil., list Oct. 16, 784, dis 82 5 Am. S. Co., Philadel, list, Oct. 16, 784, dis 82 5 Am. S. Co., Philadel, list, Oct. 16, 784, dis 82 5 Am. S. Co., Bay State, list Feb. 28, 83 dis 65 & 10 8 B. B. & W. Philadel, list Oct. 16, 1884, dis 66 & 10 8 B. & & M. Co., dis 66 & 10 8	Sew riaven and Middlesex. dis 75&10 & 80 Buck Bros. dis 30 Merrili. dis 60&10&10 Merrili. White dis 60&10&10 Grands Firmers. dis 50 & 50&5 Tanged Firmers, Butchers. 41.76 & 45.6 to Tanged Firmers, Buck Bros. 45.00 to Clamps.	Central Stamping Co.'s listdis 33¼&2 @ —1  No
24-70 4	Tanged Dimers, Butchers	\$ Sidney Shepard & Co.         dis 40.82 9           0 Acme.         dis 60 8           2 Iron Clad Mfg. Co.'s list         dis 70 9
Stove		P dog\$3.00 3.75 4.25 4.75 5.25 6.00 7.00 8.00 9.00
achine	Providence Tool Co. 's Wrought Iron   dis 25 Adjustable, Gray 's   dis 20 Adjustable, Gray 's   dis 20 Adjustable, Lambert's   dis 20 Adjustable, Snow 's   dis 40& 5 Adjustable, Snow 's   dis 15 Adjustable, Stearns '   dis 20& 10 Cabinet. Sargent's   dis 66% 10 Carliage Makers', Sargent's   dis 66% 10 Ebernard Mfg. Co   dis 40& 5 @ 40& 10 Warner's   dis 40% 10 Saw Clamps   See Vise Clips   See Vise Clips	Cauges
### Without Augers. Upright. Apgular.  Ouglas	Cabinet. Sargent's dis 66%&10 Carriage Makers', Sargent's dis 66%&10 Ebernard Mfg. Co. dis 40&& 64 0&1	Wife. Brown & Sharpe's   dis 10 state
nnings	Warner's. dis 40&10 Saw Clamps	%         "Diamond" Gimlets.         dis 40&10 %           Double Cut, Shepardson's.         dis 45 %           Double Cut, Ives'         dis 50 %
101 Ends	Saw Clamps	### Gille Cut, Douglass ### ### ### ### ### ### ### ### ###
rgent & Co.'s	Cockeyea. dis 50 Cockes Brass. dis 55&10&2	# (#ine Pots.  Tinned and Enameled
uckus, Nos. 110 to 114 and 31 to 33. dis 60&5@60&10 \$ uckus, Nos. 6, 8, 12, 14	American Enterprise Man Co	The state of the s
uckus, Nos. 16, 18, 20, 29, 7, 9, 11 dis 70&10cb 5 rber's, Nos. 10 to 16, dis 50 \$ rber's, Nos. 10 to 16, dis 50 \$ rber's, Nos. 40 to 63. dis 50 \$ rber's, Nos. 40 to 63. dis 50 \$ rber's, Nos. 40 to 63. dis 50 \$ rowrd's dis 60 \$	Webb's Fatent	Haltera.—Covert's Pat. 1/2 Jutedis 50&10&2 \$ Covert's Homp Horse and Cattle Tiedis 50&10&2 \$ Covert's Jute Horse and Cattle Ties
es' Novelty	Bernis & Call Co. 's Uriders. dis 70c7/02/10 Bernis & Call Co. 's Compasses & Calipers. dis 60&5 Bernis & Call Co. 's Wing & Inside or Outside. dis 60&5 Bernis & Call Co. 's Wing & Inside or Outside. dis 60&5 Bernis & Call Co. 's Wing & Inside or Outside. dis 60&6 Bernis & Call Co. 's (Call's Patent Inside). dis 30	The state of the s
mmon Ball, American 8½ in., \$1.30 ; 10 in.\$1.50 rtholomew's. Nos. 25. 27. 30dis 50&10@50&10&10 \$ rtholomew's. Nos. 117. 118, 119 da 65 @ 65&5 \$	Semis & Call Co.'s Double	Maydole's
Marker's   Imp'd   dis 60&10&5	Excelsior. dis 50 Cook* Extension. dis 50 Cook* Extension. dis 20 @ 20&5 J. Stevens & Co. *Calipers and Dividers. d*s 26&10 Coopers* Toels. dis 20 @ 20 Exadley* Toels.	Buffalo Hammer Co
Trackete	Coppers' Toels   dis 20	Magnetic Tack, Nos. 1, 2, 3, \$1.25, 1.50 and 1.75. dis 25&10 \$\frac{1}{2}\$ Nelson Tool Works. dis 40&10 \$\frac{1}{2}\$ Warner & Nobles. dis 10 \$\frac{1}{2}\$
elf, plain, Sargent's listdis 55&10 @ 55&10&10 \$ elf, fancy, Sargent's listdis 60&10 @ 60&10&10 \$ adins, plaindis 60&10 @ 60&10&10 \$ adins, plaindis 65&10 @ 65&10&10 \$	Gls 334 60 40 5 Sandusky Tool Co	Humason & Beckley.
guiar listdis 75&10 \$	Sandusky Tool Co.   dis 30 @ 30 & 5     Corkscrews.	Heavy Hammers and Siedges
## Self-Basting   Inch 9 10 9 x 11	Wadsworth's dis 10 5 Cradles. dis 25 g Cradles. dis 25 g Cradles.	Providence Tool Co., Leg Irons, \$25.00 \( \psi\) doz din 10 \( \psi\) Tower's dis 25 \( \psi\) Daley's Improved Hand Cuffs: 2 Hands, Polished, \( \psi\) doz, \( \psi 48 \); Nickeled, \( \psi 57 \); S Hands, Polished, \( \psi\) doz, \( \psi 48 \); Nickeled, \( \psi 57 \); S Hands, Polished, \( \psi\) doz, \( \psi 27 \); Nickeled, \( \psi 4 \)
	Wadsworth's.         dis 36 s           Cradies.         dis 40 & 5 & 2 s           Grain.         dis 40 & 5 & 2 s           Crow Bars.         dis 40 & 5 & 2 s           Cast Steel.         \$\P\$\$ 334c           Iron, Steel Points.         \$\P\$\$ 354c           Curry Combs.         \$\P\$\$ 15 & 30 & 50 & 10 & 50 & 10 & 10 & 50 & 10 & 1	doz. \$72 : Nickeled. \$84
Ichkiss' low list.	Rubber dis 50&10 @ 50&10&10 g Rubber dos \$10.00, dis 25 @ 30 g Perfect dis 50&10 @ 50&10 g	Door or Thumb. Nos
Sutta.	Currain Pina. Silvered Glisse. net White Enamel net	Roggin's Latches
Trought Brass	Wostenholme	Barn Door # dos. \$1.40, dis 10&10 \$ Cheet and Lifting dis 70 \$ Handles, Wood— Saw and Plane dis 40&10 \$ Hammer, Hatchet, Axe, Sledge, &c
ast Joint, Narrowdis 60&5 @ 60&10&5 \$	Dividers—See Compasses. Dog Cellars. Embossed Glit, Pope & Stevens' list	Hammer, Hatchet. Axe. Sledge. &c dis 25 @ 30 g Brad Awi
pose Joint Japanned pose Joint Japanned pose Joint Japanned prisament Butta dis 70&10@70 arer's Hinges & &10&5 \$	Brass, Pope & Stevens' list	Hammer, Hatchet. Axe. Sledge. &c
Arliament Butta	Brass. Fope & Stevens* list.    Boor   Springs.	Socket Framing Chiesl, assorted # gross 5.00 J. B. Smith Co. 's Pat. File. 4 gross 2.75 July 40 feb. 50 %
ose Pin, Acorns, Jap, Pitd. Tips)  night Iron- ust Joint Narrowdis 65&2 %	Star (Coll), list April 19, 1886	Auger, assorted. # gross 5.00 40&10 % Auger, large. # gross 7.00 40&10 % Patent Auger, Ives'
sught from-           ast Joint Narrow         dis 65&2 \$           ast Joint, Lt. Narrow         dis 65&2 \$           ast Joint, Broad         dis 65&2 \$           ast Joint, Broad         dis 65&2 \$           oses Joint, Broad         dis 65&2 \$           side Blind, Broad         dis 65&2 \$           side Blind, Regular         dis 65&2 \$           side Blind, Light         dis 65&2 \$           some Pin, Wrt         dis 65&5&2 \$           some Pin, Light         dis 65&2 \$           consed Wrought Butts         dis 40&2 \$           dis 4 Butts-         dis 40&2 \$	Philadelphia	Patent Auger, Swan's
side Blind, Regular	Shaw Door Check and Springdis 25 @ 30 @ 35 s Elliott's Door Check and Springdis 25 s Orawing Knives.	Hoe, Rake, Shovel, &c
1008	Witherby and Douglas	Hangers
id Butte-         dis 75&2 %           pricer         dis 75&2 %           simer         dis 50&5&10 %           ymour         dis 70&2 %           sil & Porter         dis 80 %           cholson         dis 45&10 %	Drawles   Relives   dis 75 @ 76&5 %   Witherby and Douglas   dis 75&5 @ 76&10 \$ New Haven and Middlesex   dis 75&5 @ 76&10 \$ New Haven and Middlesex   dis 75&5 @ 76&10 @ 80 %   dis 75&6 @ 76&10 @	Samson Steel Anti-Friction
cholson. dis 45&10 s  after. Nos. 1, 3, 5, dis 80&6 de 80&10 s  ark's, Nos. 1, 3, 5, dis 80&6 de 80&10 s  rgent's, Nos. 1, 3, 5, 11, 13, dis 75&10&10 s  rgent's, No. 12 dis 75&10&10 s  dis 75&10&10 s  cpan'd's "Noseless." Nos. 50, 60, 65, 45 and  dis 75&10 de 80&6&6 s  cpan'd's Champion Gravity, No. 75, dis 80&5&5 s  cpan'd's "Gravity," No. 1, 3 and 5 s  dis 80&6&6 s	Adjustable Handledis 20 @ 25 \$ Wilkinson's Foldingdis 25 @ 25&5 \$ Drills and Drill Stocks.	Champion
rgent's, No. 12	Drill Stacks	Climax Steel Auth-Friction
epard's Champion Gravity, No. 75dis 80&5&5 \$\frac{1}{8}\$ epard's "Gravity." Nos. 1. 3 and 5dis 80&10&26 \$\frac{1}{8}\$ epard's Steamboat Gravity. No 10. dis 80&10&26 \$\frac{1}{8}\$ epard's "O. S." and "Acme" Lull & Forter	Breast, Millers Falls	Challenge dis 50 dis 50 g Sterling Improved (Anti-Friction) dis 50 g Yetor, No. 1, \$15; No. 2, \$16,50; No. 3, \$18. dis 50 de 2 Cheritree dis 50 de 50 dis 50
epard's "O. S." and "Acme" Lull & Porterdis 75&10&5 \$ epard's "Queen City" Reversible	Ratchet, Ingersoll's.       dis 25 %         Ratchet, Parker's.       dis 20 @ 200.5 %         Ratchet, Whitney's.       dis 20 £10 %	Ridgers
06. 3	Satchet, Weston's	Terry's Patent. # dos. pr., 3% in. \$10, 5 in., \$12 in., dis 40&5@40&10 Cronk's Patent. No. 4, \$12; No. 5, \$14.40; No. 6, \$18 \$
nscher's Cleavers. nason & Beckley Mfg. Codis 30&5 @ 30&10 s lley's	Wilson's Drill Stocks	Wood Track, Iron Clad # ft. 8c, dis 5025 @ 50210 \$
ty's	Norse	Eclipse
Haven Edge Tool Co.'s	Drill Bits.—See Augers and Bits.  Drill Chucks.  (cree's Reach Patent	The Ball Bearing Door Hanger
n Oveners. enger's Comet	forse's Adjustableeach, \$7.00. d's 20 @ 20&5 % anburyeach, \$6.00, dis 30 @ 30&5 % Dripping Pans.	American
an's \$\psi\$ dos \$3.75, dis 20 \$\frac{1}{3}\$. French \$\psi\$ dos \$2.20, dis 55 @ 60 \$\frac{1}{3}\$. Fron handle \$\psi\$ gross \$6.00, dis 45 @ 50 \$\frac{1}{3}\$.	er 2	Paragon, Nos. a, 5, 59 and 0
enger's Cotnet.	amily (T. & S. Mfg. Co.). # dos \$4.50, dis 33½ s amily (T. & S. Mfg. Co.). # gro, \$17.00@\$18.00 tandard. # gro, \$12.00 (Ingston.	Judd's, list of 1\6 changed to \$14.00
d s Best. W gross, No. 1, \$12.00; No. 2, \$24.60; A s 36.00 dis 50210 \$ 7 ersal	ceme	Sargent's Patent Guarded         dis 70&10&10           German, old list         dis 75 \$           German, Sargent's 1885 list         dis 50&10 \$
estic	er 2	Covert New Patent dis 50&2 % Covert New R. E. dis 50&2 % Covert New R. E. dis 60&2 % Covert New R. E. dis 60&2 %
New list, Aug., 1883, dis 10 cds 10 sd dis 10 sd	Kmery. No. 4 to No. 54 to Flour, CF, 46 gr. 150 gr. F. FF.	Rotchkiss
Steel, Folished	egs, V B	Hatchers.—List Jan. 1, 1886.  Isalah Blood
rpet Sweepers.	Enameled and Tinued Ware.—See Hollow- are.  Escutcheon Pins. on and Brass, list Nov. 11, 1885	Harcheta
	on and Brass, list Nov. 11, 1885	O. Hammond & Sou
₩ doz \$17.00 W	ooddis 25 \$	Ten Eyek Edge Tool Codis 40&10@40&10&5 %

5	Shingling, Nos. 1 2 3.    \$\psi\$ doz \$5.50 \$\psi\$.00 \$6.50   \$6.50 \$6.50   \$6.00 \$6.50   \$6.50 \$6.50   \$6.00 \$6.50   \$6.50 \$6.50   \$6.50 \$6.50   \$6.50 \$6.50   \$6.50 \$6.50   \$6.50 \$6.50   \$6.50 \$6.50   \$6.50 \$6.50   \$6.50 \$6.50   \$6.50 \$6.50   \$6.50 \$6.50 \$6.50   \$6.50 \$6.50 \$6.50   \$6.50 \$6.50 \$6.50   \$6.50 \$6.50 \$6.50 \$6.50   \$6.50 \$
2	# Hay Knives.  Lightning # doz \$ 18 dfs 20 %   Electric # doz \$0.50 @ \$10.50
0	\$\ \text{Gem.} \ \notin \ \delta \ \text{doz} \ \ \seta \ \text{12.50 @ \ \seta \ \seta \ \text{35.85 @ \ 40 \ \text{8} \ \text{Heath Patent.} \ \notin \ \delta \ \text{doz} \ \ \seta \ 213.60 \ \text{35.813 \ 60 \ 213.60 \ \text{213.60 \ 213.60 \ 213.60 \ 213.60 \ \text{213.60 \ 213.60 \ \text{213.60 \ 213.60 \ \text{213.60 \ 213.60 \ 213.60 \ \text{213.60 \ 213.60 \ 213.60 \ \text{213.60 \ 213.60 \ \text{213.60 \ 213.60 \ 213.60 \ 213.60 \ \text{213.60 \ 213.60 \ 213.60 \ 213.60 \ \text{213.60 \ 213.60 \ 213.60 \ 213.60 \ \text{213.60 \ 213.60 \ 2
0 0 0 0	Carter's Needle
0 5	Strap and T dis 65&5&2 & Screw Hook and (8, 10, 12 in. * b 346@334e Strap. 14 to 36 in. * b 24c@234e
5 9	(14 in. & up. @ h 216@284#
0 9	Rolled Blind Hinges, Nos. 32 and 34
5 9	Rolled Plate
99	"Providence" over 12 in., & b
5 9	Union Spring Hinge Co.'s list. March. 1886 dis 20 & Acme. Crown. Empire and U. S
5 9	American, Gem, and Star, Bronzednet Oxford, Bronze and Brassnet Barker's Double Actingdis 20&10 4
4 W. W.	Union Mfg. Co.   dis 25 %   Bommer's   dis 30 %   Buckman's   dis 25 %
et	Gate Hinges—
XXXX	N. E. Reversible \$\psi\$ doz \$7.00, d1s 55 \psi\$ \text{Clark's, Nos. 1 2 3.} \text{dis } 60&10&2 \psi\$
N W W	Automatic. \$\psi\$ doz \$5.00, \text{ dls 55 }\psi\$ Common Sense. \$\psi\$ doz pair \$4.50, \text{ dis 50 }\psi\$
82	Reed's Latch and Hinges 29 doz gots \$12 die 50 d
N. A.	
76	Hanatea
₩ 50	D. & H. Scovil
%	D. & H. Scovil
25 4 %	Hubbard & Co.
%	HIU'S Old Style Kingers. # doz. \$3.25 @ 3.50 HIII's Tongs. # doz. \$5.50 @ 6.00 HIII's Rings. # doz boxes, \$2.00 @ 2.25
20	Perfect Ringers # 002 boxes \$1.70 @ 2.09 Perfect Ringers # doz \$2.50 Blair's Hog Ringers # doz \$2.50 @ 2.75
報 5元 5元	Champion Ringers # doz \$2.25 Champion Rings, Double # doz \$2.25 Rrown's Ringers # doz \$2.25
***	Brown's Rings. 2 doz, \$1.25 @ 1.35 Holsting Apparatus. 2 doz, \$1.25 @ 1.35 "Moore's" Hand Hoist, with Lock Brake. die 15 5
***	"Moore's" Differential Pulley Blockdis 20 % Hollow-Ware.  Iron-
ă K	Stove Hollow-Ware, Grounddis 50&50&60&10 % Stove Hollow-Ware, Ungrounddis 50&10@60&5 % Knameled and Tinned Hollow-Ware—
×	Rettles dls 50&10 %
*	Ovai Bollers, Saucepans and Glue Pots dis 30 a 35 gray Enameled Ware. dis 40 a 40 & 40 & 5 f Agate and Granite Ware. dis 50 a 50 & 5 g Galvanized Tea-Kettles—Inch
8	Silver Plated— Reed & Barton
	Meriden Brittania Co.
6 6	Holmes & Edwards Silver Codis 50 % William Rogers Mfg. Co
6 6 6	Cast Iron-Bird Cage. Sargent's list
666	Cast Iron-   Bird Cage, Sargent's list.   dis 60&10&10 \$   Bird Cage, Reading.   dis 60&10&10 \$   Clothes Line, Sargent's list   dis 66%,6210 \$   Clothes Line, Reading list.   dis 66%,6210 \$   Celling, Sargent's list.   dis 60&10.0 \$   Harness, Keading list.   dis 60&10.0 \$   Coat and Hat, Sargent's list.   dis 60&10.0 \$   Coat and Hat, Sargent's list.   dis 60&10.0 \$   Coat and Hat, Pargent's list.   dis 60&10.0 \$   Prought Iron-
	Coat and Hat. Reading
000	Cotton Pat. 'N, Y. Mallet & Handle W'kn)
	Wrought Staples, Hooks, &cSee Wrought Goods Bench HooksSee Bench Stope
	Wire Coat and Hat, Gem, list April, 1886dis 45 % Wire Coat and Hat. Miles', list April, 1886dis 45 % Beltdis 80 @ 80&5 %
1	Wire Screw Hooks and Eyes. See Bright Wire Goods Grass
	whithere—Fatent dis 55 ⊈ Hooks and Eves—Malleable Iron dis 70 ⊈ Hooks and Eves—Brass. dis 60&10&10 ⊈
	Herse Nalls. Nos. 5 6 7 8 9 10  Ausable 9 8 314 284 264 255 246 234 dis 258 10 4
1	Clinton, Pl'n. \(\P\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
1	Clinton, Pl'n. \(\psi\) \(\psi\) 26\(\psi\) 21\(\psi\) 20\(\psi\) 19\(\psi\) 18\(\psi\) . \(\delta\) dis 25\(\psi\) 10\(\psi\) (10\(\psi\) 10\(\psi\) 10\(
	Clinton, Pl'n, \(\psi\) \(\pi\) 286 216 206 196 186. \(\delta\) dis 25&10 g Clinton, Fin. \(\psi\) \(\psi\) \(\psi\) \(\psi\) dis 25&10 g Essex. \(\psi\) \(\psi\) \(\psi\) \(\psi\) \(\psi\) dis 25&10 g Essex. \(\psi\) \(\psi\) \(\psi\) \(\psi\) \(\psi\) dis 26c 206 256 24e 23c dis 26c 46c 46c 46c 46c 46c 46c 46c 46c 46c 4
	Clinton, Pl'n, \(\psi\) \(\psi\) 26\(\psi\) 21\(\psi\) 20\(\psi\) 19\(\psi\) 18\(\psi\) . \(\delta\) dis 25\(\phi\) 21\(\psi\) 20\(\psi\) 19\(\psi\) 18\(\psi\) . \(\delta\) dis 25\(\phi\) 10\(\psi\) \(\delta\) 24\(\psi\) 22\(\psi\) 21\(\psi\) 20\(\psi\) 19\(\psi\) . \(\delta\) 38\(\psi\) 03\(\psi\) \(\delta\) 24\(\psi\) 23\(\psi\) . \(\delta\) 18\(\psi\) 04\(\psi\) 29\(\psi\) 24\(\psi\) 23\(\psi\) . \(\delta\) 18\(\psi\) . \(\delta\) 18\(\psi\) 62\(\psi\) 23\(\psi\) 21\(\psi\) 20\(\psi\) 19\(\psi\) 18\(\psi\) . \(\delta\) 18\(\psi\) 19\(\psi\) 18\(\psi\) 1
	Clinton, Pl'n. # 264 224 224 224 224 236 316 358.10 g  Essex
	Bench Hooks  Wire— Wire— Wire Coat and Hat, Gem, list April, 1886 dis 45 g Wire Coat and Hat, Miles, list April, 1886 dis 45 g Wire Coat and Hat, Miles, list April, 1886 dis 45 g Wire Coat and Hat. Miles, list April, 1886 dis 46 g Belt dis 80 @ 80 @ 50 @ 50 g Belt dis 80 @ 80 @ 50 @ 50 g Wird Goods and Eyes. See Bright Wire Goods Grass \$\frac{1}{2}\$ dos \$2.00\$ Bush dis 55 g do \$2 g Whiffure—Patent dis 55 g Hooks and Eyes—Malleable Iron dis 70 g Hooks and Eyes—Malleable Iron dis 20 g Hooks and Eyes—Brass dis 60 @ 10 g Horse Nalles 6 7 8 9 10 Ausable \$\frac{1}{2}\$ 5.2 g Hooks and Eyes—Brass dis 60 @ 10 g Horse Nalles 6 7 8 9 10 Ausable \$\frac{1}{2}\$ 5.2 g Horse Oralles 6 7 8 9 10 Clinton, Plin, \$\frac{1}{2}\$ 2.2 g Horse Oralles \$\frac{1}{2}\$ 5.2 g Horse Oralles
1	Horse Shoes -See Shoes, horse.
1	Horse Shoes -See Shoes, horse.
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1	Horse Shoes -See Shoes, horse.
	Hose Shoes —See Shoes, 1078c.  Hose, Rubber
	Hose Shoes —See Shoes, 1078c.  Hose, Rubber
	Hose Shoes —See Shoes, 1078c.  Hose, Rubber. — 75&10 @ 75&10 @ 75&10 &
	Hose Shoes —See Shoes, 1078c.  Hose, Rubber. — 75&10 @ 75&10 @ 75&10 &
	Hose Shoes —See Shoes, 1078c.  Hose, Rubber. — 75&10 @ 75&10 @ 75&10 &
	Hose Saces — Sec Shores. Holes.  Hose Rubber. — 75&10 @ 75&10 @ 60&10 \$  I e Picks, Chisels. &c.  Lee Picks, Chisels. &c.  I explicks, Chisels. &c.  I explicks, Chisels. &c.  I explicks, Chisels. &c.  I explicks, Chisels. &c.  I explication for the state of the sta
	Hose Shoes —See Shoes, Holse.  Hose, Rubber. — 75&10 & 75&10 & 62 5&10 & 5 N. Y. B. & P. Co. Standard — 41s 90 & 60 & 60 & 61 & 5 I Ce Picks, Chisels. &c.  Lee Picks, Chisels. &c.  Lee Picks, Chisels. &c.  Lee Chisel. — \$\psi \text{dox} \text{dox} \text{3.00} \text{dox} \text{3.00} \text{dox} \text{3.00} \text{dox} \text{3.00} \text{dox} \text{3.00} \text{dox} \text{3.00} \text{3.00} \text{3.00} \text{dox} \text{4.00} \text{dox} \text{4.00} \text{dox} \text{4.00} \text{dox} \text{4.00} \text{dox} \text{3.00} \text{dox} \text{4.00} \text{dox} \te
	Hose Shoes —See Shoes, Holse.  Hose, Rubber. — 75&10 & 75&10 & 62 5&10 & 5 N. Y. B. & P. Co. Standard — 41s 90 & 60 & 60 & 61 & 5 I Ce Picks, Chisels. &c.  Lee Picks, Chisels. &c.  Lee Picks, Chisels. &c.  Lee Chisel. — \$\psi \text{dox} \text{dox} \text{3.00} \text{dox} \text{3.00} \text{dox} \text{3.00} \text{dox} \text{3.00} \text{dox} \text{3.00} \text{dox} \text{3.00} \text{3.00} \text{3.00} \text{dox} \text{4.00} \text{dox} \text{4.00} \text{dox} \text{4.00} \text{dox} \text{4.00} \text{dox} \text{3.00} \text{dox} \text{4.00} \text{dox} \te
	Hose Shoes —See Shoes, Holse.  Hose, Rubber. — 75&10 & 75&10 & 62 5&10 & 5 N. Y. B. & P. Co. Standard — 41s 90 & 60 & 60 & 61 & 5 I Ce Picks, Chisels. &c.  Lee Picks, Chisels. &c.  Lee Picks, Chisels. &c.  Lee Chisel. — \$\psi \text{dox} \text{dox} \text{3.00} \text{dox} \text{3.00} \text{dox} \text{3.00} \text{dox} \text{3.00} \text{dox} \text{3.00} \text{dox} \text{3.00} \text{3.00} \text{3.00} \text{dox} \text{4.00} \text{dox} \text{4.00} \text{dox} \text{4.00} \text{dox} \text{4.00} \text{dox} \text{3.00} \text{dox} \text{4.00} \text{dox} \te
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	Hose Shoes —See Shoes, Holse.  Hose, Rubber. — 75&10 & 75&10 & 62 5&10 & 5 N. Y. B. & P. Co. Standard — 41s 90 & 60 & 60 & 61 & 5 I Ce Picks, Chisels. &c.  Lee Picks, Chisels. &c.  Lee Picks, Chisels. &c.  Lee Chisel. — \$\psi \text{dox} \text{dox} \text{3.00} \text{dox} \text{3.00} \text{dox} \text{3.00} \text{dox} \text{3.00} \text{dox} \text{3.00} \text{dox} \text{3.00} \text{3.00} \text{3.00} \text{dox} \text{4.00} \text{dox} \text{4.00} \text{dox} \text{4.00} \text{dox} \text{4.00} \text{dox} \text{3.00} \text{dox} \text{4.00} \text{dox} \te
THE THE PARTY OF THE PROPERTY	Hose Naces — Sec Shore. Horse.  Hose Rubber.  N. Y. B. & P. Co., Standard
THE THE PARTY OF THE PROPERTY	Hose Naces — Sec Shore. Horse.  Hose Rubber.  N. Y. B. & P. Co., Standard
NAME OF STREET STREET,	Hose Shoes —See Shoes, 1078c.  Hose Rubber.  N. Y. B. & P. Co. Standard
NAME OF STREET STREET,	Hose Shoes —See Shoes, 1078c.  Hose Rubber.  N. Y. B. & P. Co., Standard

June 24, 1886.	
Lawn Mowers	Pinking Irons. Pipe, Wrought Iron. 13 and under, Piain. 14 and under, Galvanized. 15 and over, Piain. 15 and over, Piain. 15 and over, Galvanized. Bother Tubes.
Lemon Squeezers. Porcelain Lined, No. 1	1¼ and under. Galvanized
Wood, No. 2	Boiler Tubes.
Sammis'No. 1, \$5; 2, \$9; 12, \$18 ♥ doz. ;d18 25&10 ¢  Jennings' 'Star''	Planes and Plane Irons.  Wood Planes— Molding
Cheaper Machines Lemon Squeezers Porcelain Lined, No. 1. # doz. \$6.00, dis 25&30 \$ Wood, No. 2. # doz. \$3.00, dis 30 \$ Wood, No. 2. # doz. \$3.00, dis 30 \$ Wood, Ocumnon # doz \$1.70 os. 1.70 Duniap's Improved. Sammis'. No. 1, \$6 ; 2, \$9 ; 12, \$18 # doz. \$1.70 dis 20 \$ Sammis'. No. 1, \$6 ; 2, \$9 ; 12, \$18 # doz. \$2.00 dos \$2.50 The "Boss". # doz \$2.50 The "Boss". # doz \$2.50 Little Giant. dis 50 \$ King. dis 40&5 \$ King. Machine Little Giant.	Bench, Second Qualitydiron Planes—
Lines. Cotton and Linen Fish, Draper'sdis 50 %	Balley's Stanley R. & L. Co.)
Cotton and Linen Fish, Draper's dis 60 % Draper's Chalk Draper's Hason's Linen, 34 ft., No. 1, \$1.2 \(\nu\); No. 2, \$1.75; No. 3, \$2.25; No. 4, \$2.75; No. 5, \$3.25 \(\nu\) dis 55 \$	Meriden Mal. Iron Co.'s Iron
Cotton Chalk	Plane Irons— Plane Irons— Plane Irons—
Masons' Linen, No. 3%, \$1.50; No. 4, \$2; No. 44, \$2.50 Masons' Colored Cotton	Plane frons. Plane frons. Butcher's
\$1.75; No. 3, \$2.25; No. 4, \$2.75; No. 5, \$3.25. dis 25 \$7 cotton Chalk.  **Citton Chalk.**  **Silver Lake, Braded, Nos. 0, \$6.00; No. 1, \$6.50; No. 2, \$7.00; No. 3, \$7.50 \$\$ gross.  **Mavons' Linen, No. 346, \$1.50; No. 4, \$3; No. 446, \$2.50 \$\$ Masons' Linen, No. 346, \$1.50; No. 4, \$3; No. 446, \$2.50 \$\$ wire Clothes, No. 18, \$3.75; No. 19, \$3.25; No. 29, \$2.75. \$\$ ventilator Cord, Samson Braided, White or Drab Cotton.  **Group Cord Cord Cord Cord Cord Cord Cord Cord	I. & l i White
Locks, Padlocks, Cabinet Locks, Cell Door Locks, Latches, &c.— List, Dec. 18, 1885	Pliers and Nippers. Button's Patent
Locks. Padlocks, Cabinet Locks, &c. Door Locks, Latches, &c. List, Dec. 18, 1885 Nimick & Brittan's Burglar-Proof Locks, dis 45&2 % Nimick & Brittan's Burglar-Proof Locks, dis 45&2 % Reading Hardware Co, dist Feb. 2 1885). dis 70&25 Perkins' Burglar Proof. dist 80&25 % Perkins' Burglar Proof. dist 8334&25 %	Pliers and Nippers. Button's Patent
Cabina   Hurgiar Proof.   .dis 408.25 \$   Ferkins   Hurgiar Proof.   .dis 334,82 \$   F.   .dis 334,82 \$   F.   .dis 334,82 \$   F.   .dis 334,82 \$   F.   .dis 34 \$   F.   .dis 40 \$   .d	Gas Pilers, Custer's Nickel Plated. Gas Pilers, Custer's Nickel Plated. Sureka Pilers and Nippers Russell's Parallel P. S. & W. Cast Steel. P. S. & W. Tinners' Cutting Nippers
Yale Flat Key	P. S. & W. Cast Steel. P. S. & W. Tinners' Cutting Nippers
L. & C. Flat Key Latches	Plumbs and Levels. Standard List
"Shepardson" or "U. S."	Pocket Levels
Cabinel   Eagle, Gaylord Parker and   List March, '84, revised Corbin, '0   Jan. 1, '85, 'dis 40&2   Deltz, Nos. 30 to 39.	Poppers, Corn. Round or Square, 2 qt. Round or Square, 2 qt. Post Hole and Tree Augers Samson Post Hole Diger. # dos \$36. Fletcher Post Hole Augers. # dos \$40. Fletcher Post Hole Auger
Deitz, Nos. 36 to 39.	Samson Post Hole Digger # doz \$36. Fletcher Post Hole Augers # doz Eureka Diggers.
Stoddard Lock Co	Vaughan's Post Hole. Auger, per doz, \$2
Barnes Mfg. Co. dis 40 % Eagle and Corbin Trunk. dis 25&2 %	Fletcher Post Hole Augers. # doz  Kureka Diggers.   1  Leed's.   4  Konler's Hole Auger, per doz, \$2  Konler's Hercules.   6  Kohler's Hercules.   7  Kohler's Hercules.   7  Kohler's Host Barn.   7  Potato Parers.   4  Antrim Combination   4  Antrim Combination   4  Hoosier.   7  H
Romer'sdis 25 %	Schneidler Ryan's Post Hole Diggers
Mallory, Wheeler & Co List Dec. 23, 1884. Dis Nimick & Brittan Mfg. Co 70&5670&10&5 %	Potato Parers. White Mountain
Norwich Lock Co	Pruning Hooks and Shears.
Eagle	\$18.00. Disston's Pruning Hook # doz \$12.
Komer's, Nos. 200 to 505	Disston's Combined Pruning Hook an \$18.00. Disston's Pruning Hook # dos \$12. E. S. Lee & Co.'s Prunin Tools. Pruning Shears, Henry Pat. # dos \$1. Henry's Pruning Shears # dos \$1. Wheeler, M. & Co.'s Combination. # do \$1. Juniap's Saw and Chist. # do J. Mallinson & Co. No. 1, \$5.2 Pulleys.
Hotchgias	Wheeler, M. & Co.'s Combination # do Dunlap's Saw and Chist i # do J. Mallinson & Co
Nomer   Nome	Hot House, Awning, &c
Scandinavian	Japanned Side
Lumber Tools.  Ring Peavies, "Blue Line" Finish. # doz \$20.00 Ring Peaves, Common Finish. # doz \$18.00 Ring Peaves, Common Finish. # doz \$18.00 Steel Socket Peavies. # doz \$21.00 Mall. fron Socket Peavies. # doz \$18.00 Cant Hooks, "Blue Line" Finish # doz \$18.00 Cant Hooks, Common Finish. # doz \$18.00 Cant Hooks, Common Finish. Blue Line" Finish # doz \$16.00	Hay Fork, Solid Eye, \$4.00; Swivel, \$4.50 Hay Fork, "Anti-Friction," 5 in. Solid.
Mall. fron Socket Peavies. \$\psi\$ doz \$19,00 Cant Hooks, "Blue Line" Finish \$\pi\$ doz \$16.00 \$10,00 \$10.00	Hay Fork, "Anti-Friction," 5 in. Solid, Hay Fork, "F" Common and Pat. Bush Hay Fork, Tarbox Pat. Iron. Hay Fork, Reed's Self-Lubricating Shade Back
Cant Hooks, Mall. Socket Clasp, "Blue Line" Finish	Snade Rack
Cant Hooks, mail: Scale Chap Collaboration # doz \$14.50 Cant Hooks, Clip Clasp, "Blue Line" Fin. # doz \$14.00	Pitcher Spout, Best Makers
Finish Cant Hooks, Mail. Socket Clasp Common Finish.  And Hooks, Clip Clasp, "Blue Line" Fin. \( \psi \) doz \( \psi \) 44.50 Cant Hooks, Clip Clasp, Common Finish. \( \psi \) doz \( \psi \) 45.20 Cant Hooks, Clip Clasp, Common Finish. \( \psi \) doz \( \psi \) 45.20 Fixe Poles, Pike \( \phi \) Hook, 12 ft. \( \psi \) 4 ft. \( \psi \) 60.75 Fixe Poles, Pike \( \phi \) Hook, 12 ft. \( \psi \) 4 ft. \( \psi \) 67.50 Fixe Poles, Pike only, \( \psi \) 400. 11.00 13.00 16.00 20.00	Punches. Saddlers' or Drive, good quality
# dos	Bemis & Call Co.'s Springfield Socket. Spring, good quality
Pike Poles not Ironed, # 6.00 7.00 9.00 12.00 16.00 8etting Poles, \$\pi\$ doz 14.00 15.00 17.00	Pitcher Spout, Cheaper Goods  Funches Saddiers' or Drive, good quality.  Saddiers' or Cali Co.'s Springfield Socket.  Spring, good quality.  Grant Spring, Leachs' Faten.  Spring, Leachs' Faten.  Funches  Solid Tinners'.  June 1
wamp Hooks         # dos \$12.50           Landing Blocks         # dos \$22.50           8kidding Tongs         # dos \$51.00	Rail. Sliding Door, Wrought Brass # 1
Log Binders Hot S M, dis 25 %; 5 to 10 M, dis 30 %. Square Steel Boot Calks dis 40 %.	Sliding Door Bronzed Wrt. Iron Sliding Door Iron, Painted # foot 4# Barn Door, LightIncn. 1/4
Color   Colo	Ball. Silding Door, Wrought Brass # B: Silding Door Bronzed Wrt. Iron Silding Door Iron, Painted # foot 48 Barn Door Iron, Painted # foot 48 Barn Door Iron, Painted # 60 B. D. for N. E. Hangers - 8 Brail. Fer 100 feet \$2.35 Ferry's Wrought Iron, 5¢ # foot. Victor Track Rail, 7¢ # foot.  ##################################
Four-ounce bottles W dos, \$1.75; W gro. \$17.00 net	Victor Track Rail, 74 % foot
Mallets	Atakes. Cast Steel dis 60&1 Malleable dis 60&1 Piqua Handle and Mfg. Co.
Pagular Hat	T D Towney Desce Co
Meat Catters   1   2   3   4	Wostenholme & Butcher
Woodruff's	Genuine Emerson
# doz. #22.00 #7.00 40.00—40.00 % rales'	Rivets.  Black and Tinned Iron, Flat Head M
Tables   Nos.   11   12   13   14   60 & 10 & 10 & 10 & 10 & 10 & 10 & 10 &	Rivets. Black and Tinned Iron, Flat Head M. (in packages and in bulk). Block and Carriage (in C packages). Iron Blyets (other than above) in bulk. Black and Tinned Burrs.
10 10 00 94 49	North Divote any fromposity sold of
Each\$3 00 2.50 4.00 6.00 10.00 Pennsylvania	from above prices.  Copper Rivets and Burrsdis
Nos. \$5 00 2.50 4.00 6.00 10.00 Pennsylvania. \$24.00 38.00 38.00 28.00 \$10.00 \$	Copper Niveta and Burrsdis  Nos. 7 8 9 10 11 12 1  W b 496 506 52¢ 54¢ 56¢ 58¢ 6  Rivet Setsdis  Rods.
Kieser's No. 55	Stair, Brass Stair Black Walnut
Kieser's Butcher	Rollers. Barn Door, Sargent's list. Acme (Anti-Friction). Union Barn Door Roller.
Reef Shavers (Enterprise Mrg. Co.Ldis 20210 @ 30 %	Repe. Muf'rs list, May 13, 1886. Mantia
Lothrop's # dox, Single, \$2.00; Double, \$3dis 40645 \$ Smith's. # dox, Single, \$2.00; Double, \$3dis 40645 \$ Khapp & Cowles	Man'la, Hay Rope
Molasses trates. dis 70&10@75&5 \$ Stebbins' Pat's	Manila Tarred Rope Manila, Hay Rope, Sisal 4 16 inch and large Sisal 5 16 inch and large Sisal 6 16 inch Sisal, Hay Rope, Sisal, Hay Rope, Sisal, Farred Rope, Sisal, Farred Rope Baires Raires
Stebbins' Tinned Ends	Sisal, Single Ply Lath Yarn
Weed s	Eales. Boxwood. Ivory
### Money Dra wers. — # doz. \$18. Muzzles. — Safety, # doz. \$28	Stephens Ivory
am. (2d quality), \( \psi \) gro, 1 blade, \( \psi 12 \) 3 blades, \( \psi 14 \) 3. blades, \( \	Stephens Ivory.  ad Irons. From 4 to 10, at factory \$ 100 Belf Heating. Tailors \$ 00 Gleasons Shield and Tollet \$ 00 Birs. Foct's Irons, Double Fointed. Birs. Foct's Irons, Double Fointed. Birs. Foct's Irons, Double Fointed. Combined Fluter and Sad Iron \$ 400. Fox Reversible, Self-Fluter \$ 400. Fox Reversible, Self-Fluter \$ 400. New England.
Wire Carpet Nails	Mrs. Pott's frons, Double Pointed Mrs. Pott's frons, Square Back
Giant, No. 1. # doz \$30.00, dis 10 \$ Pelican # doz \$0,00 dis 25 \$ Ross # doz \$30, dis 30 \$	Enterprise Star Irons, new 11st, July 20, Combined Fluter and Sad Iron 4 dox. Fox Reversible, Self-Fluter
Wire Carpet Nails	Chinese Laundry (N. E. Butt Co.) New England
Hexagon Nuts, % and smaller	Sand Paper and Emery Paper. List April 19, 1886
Washers. 7-16 and larger	Common
boxes, 14 to tist.  Nus. CFRACKEFS.  Table (Humason & Beckley Mfg. Co.)	Common Russia Sash. Patent " Cable Laid Italian " India Cable Laid " Silver Lake A Quality White
Oakum.	Silver Lake, A Quality, White50¢. Silver Lake, A Quality, Drab55¢. Silver Lake, B Quality, White55¢.
U. S. Navy 10/46 Navy 10/46	Silver Lake, B Quality, Drab
Ollers.	Samson, Braided, White Cotton
Zinc and Tim	Cable Laid Italian India Cable Laid Silver Lake, A Quality, White 50¢. Silver Lake, A Quality, Drab 55¢. Silver Lake, B Quality, White 50¢. Silver Lake, B Quality, White 50¢. Silver Lake, B Quality, White Oaity 55¢. Silver Lake, B Quality, White Oaity 55¢. Silver Lake, B Quality, White Oaity 55¢. Samson, Braided, White Ootton 55¢. Samson, Braided, Drab Ootton 55¢. Samson, Braided, Linan Hemp 5
Prior's Patent or Paragon Zino dis 0020 @ 00210 % Chistophy Patent or Paragon Brass dis 5 5 Olmstead's Tin and Zinc dis 60 8	Clark's No. 1, \$10.00; No. 3, \$8.00 P gross Ferguson's Morris Morris' Triumph, list Jan. 1, 1886
Olmstead's Tin and Zinc.	Morris' Triumph, list Jan. 1, 1886. Walkers. Attwell Mfg. Co. Hammond's Window Springs. Common Sense. Japanned. Coppere.
Packing, Steam N. Y. Belting & Packing Codis 50 @ 50&10 % American Packing	Common tiones Wiekel Wested W.
Russia Packing	Universal
Italian Packing 14 @ 156 Cotton Packing 15 @ 186 Padlocks — See Locks. Pails. Galvanized Water. Quarts 10 12 14	Common sense, stokel Plased. W Universal Kempshall's Model. Kempshall's Model. Corbin's Dalay, 1st February 15, 1886. Corbin's Perfect. Bugunia Ferfect. Stokes and Improved Adjustal ances list March, 1885. Stokes and Corbin Stokes and Practical "Fractical" Practical "Fractical".
Pails. Galvanized Water.         10         13         14           Hill's Light Weight. # dos.         \$2.75         8.00         3.25           Hill's Heavy Weight. # dos.         3.00         3.25         8.75           Whiting's.         2.75         3.00         3.25           Fire Buckets.         2.75         3.25         8.50           Buckets. see Well Buckets.         2.75         3.25         8.50	Bugunin's New and Improved Adjustal ances, list March, 1885
Whiting a. 2.75 3.00 3.25 Fire Buckets. see Well Buckets.	Stoddard "Practical"
Pencils Faber's Carpenters' high list, dis 50 % Faber's Round Gilt. gro \$5.25 net	Stoddard "Practical" Ives Patent. Liesche's Nos. 100 & 110, # gro, #8; 105, \$ Sans Weights Solid Kyes, in ton lots Sans Weights Sans gro Staffers or Filters Sansange Staffers or Filters On Store Perry # doz. No. 1, \$15; No. 0, \$21, Draw Cut No. 4. Enterprise Mig. Co. di Silvers di
Pencils   Faber   Carpenters   high list, dis 50 5 Faber   Carpenters   high list, dis 50 5 Faber   Richard   Faber   Richard   Faber   Richard   Faber   Richard   Faber   Richard   Ri	Miles "Chailenge" \$ doz. \$20, Perry \$ doz. No. 1, \$15; No. 0, \$21,
Railroad, 5 to 6, \$11.00; 6 to 7, \$12dis 60 @ 60&10 \$	Draw Cut No. 4each, Enterprise Mfg. Codi Sülveradi
Picture Nalis.	Saws Disston's Circular, Mill and Cross Cut Disston's Hand, Panel, Rip, &c Atkins' Circular, Atkins' Silver Steel Diamond X Cuts Atkins' Concave Tooth Dexter X Cuts
Porcelain Head, Sargent's listdis 50&10&10 \$ Porcelain Head, Combination listdis 40x10 \$ Niles' Patent	Atkins' Silver Steel Diamond X Cuts Atkins' Concave Tooth Dexter X Cuts

			H	E	I	R	0
-	Pinking Irons         # doz 65¢ net           Pipe, Wrought Iron         1½ and under, Plain         dis 42½ %           1½ and under, Galvanized         dis 32½ %           1½ and over, Plain         dis 57½ %           1½ and over, Galvanized         dis 40 %           8 older Tubes         dis 52½ %	Ath		Special Cham Hollow Shingle			
	Wood Planes— Molding	W. W. Per Per Per	M. & M. & M. & M. & Ace Ci Ace H Ace Ci	tiollow shingle C. Ha C. Cha C. X C reular and Pa ross Cu ross Cu sand Sa son's C son's S son's L isl i's Ligi i's Ligi i's Ligi i's Ligi i's Ligi i's Ligi i's Hac is Hac is Hac ind. Ha ack Sa nd. Ha	e. Muland mpionuts, Tand Manel and ants, Stits. Th	ay, Din X Ci hiu B dill nd Ri anda in Ba	rag. uts. ack. p rd
-		Ric Ric Boy Boy Boy Boy	chard chard chard chard yntor yntor yntor yntor	and Sa son's M son's M son's M son's Ligh i's Ligh i's Ligh	ws, all reuls (III) K-Cuts otning otning otning	No.	1, 30 el, Bu its Man
	Plane   Irons	Ha G G S D Wi	riffin tar H lamo law nite,	's Hac 's Hac 's Hac ack Sa nd, Ha Fran Vermo	k Saw k Saw ws ar ick Sa ick Sa	s, con , Blad id Bla ws an	aple es or des des
101010101	L. & I. J. White	Sti	llmar	Fran Vermon lished ds. Sets. 's Gen 's Imit a Leve	uine	doz #3	oz \$5 1.25a
and	Gas Pilers, Custer's Nickel Plated	Na Ha Ha Bei Bei All	sh's mme mme mis & mis & mis &	r, Hote r. Bem Call C Call C Call C	chkiss is & C o.'s Le o.'s P o.'s C	all Co ver ar late ross C	's E
areigne motor	Plumbs and Levels.   dis 70&10@70&10&10 5     Standard List.   dis 70&10@70&10&10 5     Daston's   dis 45&10 7     Pocket Levels.   dis 70&10@70&10&10 5     Davis' Inclinometers   dis 70&10@70&10&10 5     Poppers Corn.   @ gro \$14,50 @ \$15     Round or Square.   45   @ \$7	Ha Dis Atl Mo Cro Bo;	rt's F ston' kins' kins' orrill's ossar yntor	r, Hoter, Bern Call Call Call Call Call Call Call Cal	Lever , \$9. N table. ion , \$15.00 er). No 1, \$12	0. 15 0; Nos	Han . 3 a
	Poppers, Corn.   Round or Square, 1 qt.   # gro \$13.50 @ \$15     Round or Square, 2 qt.   # gro \$25.6 \$26     Post Hole and Tree Augers and Diggers.   Samson Post Hole Digger.   # doz \$30.00, dis 20st.0 \$     Fietcher Post Hole Augers.   # doz \$30.00, dis 20st.0 \$     Fietcher Post Hole Augers.   # doz \$0.00, dis 20st.0 \$     Eventa Diggers.   # doz \$0.00, dis 20st.0 \$     Leed s.   # doz \$0.00, \$0.00 \$     Vaughan's Post Hole. Auger, per doz, \$25.00     Conler's Little Glant.   # doz \$1.00     Conler's Little Glant.   # doz \$1.00     Eventa Burgers.   # doz \$1.00     Eventa Burgers	AU	KINN.	raten	t		
	Conler's Little Glant   Glas 339 @ 3314 & 5     Kohler's Hercules   \$\psi \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Chi Chi Fai Sei Sei	icale ne Be	Bea ams, I	ms.	Jan.	12, 1
*****	Cronk's Foot Bars dos \$80, dis 50&5 & 50&10 \$?  Potato Parers. dos \$5.00 & 5.50 Antrim Combination \$\psi dos \$5.00 & 5.50 Antrim Combination \$\psi dos \$5.00 & 5.50 Hoosier \$\psi dos \$5.00 & 5.50 Hoosier \$\psi dos \$5.00 & 5.50 Hoosier \$\psi dos \$13.50 Pruning Hooks and Sbears.  Disston's Combined Pruning Hook and Saw. \$\psi dos \$18.50 Disston's Pruning Hook \$\psi dos \$12.00 & 168.20\$. \$18.50 E. S. Lee & Co. \$\psi Pruning Tools \text{dis 20.810} \$\psi \text{Es. Lee & Co. \$\psi Pruning Shears. Henry Pat \$\psi dos \$13.75 & \$\psi .00 \text{ net} \text{Henry's Pruning Shears. Henry Pat \$\psi dos \$12.7 & 168.20\$. \$\psi dos \$12.7 & 168.20\$. \$\psi dos \$1.50 & \$\psi .00 \text{ net} \text{Wheeler. M. & Co. \$\psi Combination \$\psi dos \$12.7 & 168.20\$. \$\psi .00 \text{ net} Wheeler. M. & Co. \$\psi .00 \text{ hist	Ad Bo Bo De Fo Shi	justa x, 1 E x, 2 E	ble Bo landle landle Box a mmon ovider	x Scra	per (8	R. 6
	Dunlap's Saw and Chiet	Do	rter's reen o	Pat. V Corner W Dr Mfg C	Vindo Irons Ivers	w and w and , War	a De
000000	Japanned Clothee Line	Bu Sta Sta Sa Sa Kn	ek Bondey anley reent re	R. & I. R. & I. R. & Co. & Co. & Co. & Cow & Cow & Cow & Cow	CO.'s CO.'s CO.'s Nos. Nos. Nos. Nos.	Vari Blac 1 & 2 40 & 80, Ro	ishe k Ha 30, C
0000	Tackle Blocks Pumps. Cistern, Best Makers	Ch	amp	k Cow k Cow erchan on Patent rd's Ad k Cow s Socke s Spiral Commo	geabi	0	
0 0	Funcher Spout, Cheaper Goods  Funcher  Saddlers' or Drive, good quality	W	ood Stat E	ws. crews- lead Ir	-List.	Febr	uary
0066000	Sliding Door, Wrought Brass w m 35¢, dis 20@25 x Sliding Door Fron Painted w foot \$4¢, dis 20@1025 \$6 Barn Door, Light Incn. \$5 \$ \$3.00 4.40—dis 10 x B. D. for N. S. Hangers—  Bull. Med. Large  Envilopment State Stat	I I	Plat E	lead, I	ron		
	S.   Not S. S.   S.   S.   S.   S.   S.   S.	La	Bench Bench	, Iron. , Wood , Wood Coach Patent	i, Bee i, Hiei Gimie rgent'	ch. kory.	int.
K K	K. azer   Azer	Ha Ja Ja Ja Le Ro	ek Se ek Se ek Se sero	ail, Sar ail, Hu ail. An rews, l rews, l rews, l li Sar comple comple	mason. Sere Miller P. S. & Sargei Ws. etc. \$1	n, Becow Cos Falls W	) 
0 %	Rivets.  Black and Tinned Iron, Flat Head M Rivets (in packages and in bulk).  Block and Carriage (in C packages).  Iron Rivets (other than above) in bulk.  Black and Tinned Burs.  Black and Tinned Burs.  dis 45 %  Soys.—Rivets are frequently sold at concessions.	G	Clipp ierm	hes. Scytherer, Fulan, Car or Wal scythes Clippean Steel	Association S	hed.	Boxe Stee
× × ×	from above prices.   dis 60&5 @ 60&10 \$	1	Bush,	Bram	ole an	d We	ed
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Barn Door, Sargent's listdis 60&10&10 \$\frac{1}{2}\$ Acme (Anti-Friction)dis 55 \$\frac{1}{2}\$	1	Scyti Shea neric uning	re. an (Car	aths. st) Ire	n86	e Pi
	Union Barn Door Holler	Se He He Fir So Ac Di Cli	rst que cond	r's, Lis 's, Lis 's Tail ality ( quality ast Sh id Cast	Ors S. C. S. T y C. S. cars	rimm Trin	ers.
***	Boxwood	1 1	ding L. & I	Cast Sh ros. & Ves. Door- & Co., L. list	list I Dec.	ec. 18	8, 188 85
	From 4 to 10, at factory \$ 100 h \$2.35 @ \$2.50 Belf Heating	1	ding	t Rolle t Rolle li's An 's Antie Shutte L list I nt's list Tool . Whit	Dec. 18	, 1885	5
	Self- Heating, Tailors	1 1/2	hoe	s, Ho n's, Pe	rkins	Mul.	e, d
	Common.         \$\psi\$ \$\psi\$, 14 \$\phi\$ \$\psi\$, 116 \$\phi\$ 115 \$\phi\$           Patent.         \$\psi\$ \$\psi\$, 136 \$\phi\$ \$\phi\$ \$\phi\$. 136 \$\phi\$ \$\phi\$ \$\phi\$.           White Coston Braided, fair quality.         \$\psi\$ \$\psi\$, 286 \$\phi\$ \$\phi\$           Common Russia Sash.         \$\psi\$ \$\phi\$ \$\phi\$ \$\phi\$           Patent         "\$\phi\$ \$\phi\$ \$\phi\$           Patent         "\$\phi\$ \$\phi\$           Cable Laid Italian         "\$\phi\$           Silver Lake, A Quality, White.         50c. dia 102 1025 \$\phi\$	An	nes' S lote.	hovels	Spaders f	les, &c reque	ntly
	Cable Laid Italian " 206 India Cable Laid " 1446 Silver Lake, A Quality, White 50¢, dis 10±10±0±5 Silver Lake, A Quality, Drab 55¢, dis 10±10±0±5 Silver Lake, B Quality, Drab 50¢, dis 10±10±5 Silver Lake, B Quality, White 50¢, dis 10±10±5 Silver Lake, B Quality, Drab 50¢, dis 10±10±5 Silver Lake, B Quality, White load 50¢, dis 10±10±5 Silver Lake, B Quality, White load 50¢, dis 20±0±5 Silver Lake, B Quality, White load 50¢, dis 20±0±5 Silver Lake, B Quality, Drab 50¢, dis 20±0±5 Samson, Braided, Drab Cotton 50¢ dis 20±0±5 Samson, Braided, Drab Cotton 50¢ dis 20±0±5 Samson, Braided, Linen 80¢ dis 20±0±0±5 Samson, Braided, Linen 80¢ dis 20±0±0±5 Samson, Braided, Linen 80¢ dis 20±0±0±5 Samson, Braided, Linen 80¢ dis 20±0±5 Samson, Braided, Linen 80¢ dis 20±		N	lic	K		
	Samson, Braided, Linen         80¢ dis 20 @ 20%5 \$           Sank Locks.         Clark's No. 1, 81.00e; No. 2, \$2.00 \$\tilde{g}\$ gross         dis 35½ \$\tilde{g}\$ ferguson's.           Clark's No. 1, \$10.00e; No. 2, \$2.00 \$\tilde{g}\$ gross         dis 35½ \$\tilde{g}\$ ferguson's.           Morris         dis 506.10 \$           Morris         Triumph, list Jan. 1, 1886.         dis 506.10 \$           Atwell Mig. Co.         dis 35 & 35½ \$           Hammond's Window Springs.         dis 36 & 35½ \$           Bronsed anse.         Japanned. Copperes.         \$\text{gross}	D	YNA	MO		ECT	RO
		В		P	lati		
	Common Sense, Sickel Plated	В		in o	-		-
-	Stoddard " Practical "   dis 10 s	IN	TH	EVER IE P LISH	LAT	ING	A
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Atkins'	Hollow Shingle	Back Mul	X Cay, I	uts	èc	P fo	oot	21 @ 22 dis 45	# GI
W. M. &	C. Chai	nd	XC	uts. F	loguli	dis	(B) (B)	30&5	St St
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Bemis &	Call Co	8 & C	all C	o.'s ne nd Spi	ew Pa	tent	r.di	8 30&5 8 30&5	% Bi
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Aiken's Hart's I	Imitati	on				\$7.00	, di	55&5 dis 20	% Iv
Atkins'	s. Star,	\$9. Nable.	0. 18	Ham	mer,	\$5.50p	dia or d	20&10 oz \$6.0	% 00 T
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Buck B	's Pater	t Ex	celsie	OF		********	.dis	45&10 dis 30	8
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Sargent	& Co.'s	Nos.	40 & 30. R	30, Ca	ast St Blade	eeL	dis.	60&10	8 K
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Sets int	erchan	geabl	0	æ a	W	doz \$18	b @	dis 25	% T
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Disston Buck B Stanley Stanley Sargeni Sargeni Sargeni Knapp Knapp Knapp Clark's Crawfo Knapp Eilrich' Allard' Kolb's Bere	s Spiral. Commo	n Sen	Hat.	₩ doz	\$4, di	is 3316 (	a 38	dts 25	% G
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Scyt Shea Americ Prunin Barnar Tinner Seymos Heinscl Heinscl First qu Second Acme ( Diamos Clipper Victor Howe is Shea	ir's, Lis	, Dec	., 18	81		di	s 60	&10&5 60&10	& Is
Heinsch First qu	h's Taile uality C	or's S	hear rimn	ners			d	is 33½ dis 80	% C
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Pater	t Roller t Roller di's Anti- shutter	r. Hai	field	l's	Dec. 1	8, 1885	. di	dia 70	% S
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Mule-A	dd \$1 e	Ken.	nde	 	*** **			\$3.7	A CI
Horse-Burde Walk Mule-Ames's Note.	hovels, —Jobbe	Spad	es, &	c., list	Nov.	1, 1888 small	еж	dis 20 tras o	n R
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wowlands Steels. dis 90% 5 % No. 1	high Mfg. Co	dis 50&10 % January 2, 1882.	Mou
Showe is and Tongs	emington's (Lowman's Patent), owland's, Black Iron	dis 50&5@50&10 \$dis 30 @ 30&10 \$dis 50&10 \$	Mc Mc Mc
Table   Tabl	Shot. cop, ¥ bag, 25 b (2¢ off for each	in 10 days)\$1.45	Me Ra Id
Table   Tabl	Shovels and Tongs.	35	T
Trialo Metallic, S. & Co., now list.	skeins, Thimble.	dis 70&10@75 %	Ree
Soldering irons	offaio Metallic, S. S. & Co., new larier's Flour Sifters	istdis 50&25 \$	Cler
Soldering irons	eves, wooden ram— Mesh 18, Nested, ≱ doz Mesh 20, Nested, ≱ doz	85¢ 83¢ 80¢ 95¢	Wor
Statistics   Sta	Mesh 24, Nested, # doz Slates. hool, by case	95¢ \$1.05	But
Statistics   Sta	Soldering Irons, overt's Adjustable, list Jan. 1, 1 Spoke Shaves.	886dis 35&2 \$	Pen
State   Contral Stampling Co.   Stat.   dis 33942   Solid Table and Tea.   Central Stampling Company   Solid Table and Tea.   Central Stampling Company   Solid Table and Tea.   dis 3042   Solid Table and Tea.   dis 3042   Solid Soli	on. ood iley's (Stanley R. & L. Co.)		
State   Contral Stampling Co.   Stat.   dis 33942   Solid Table and Tea.   Central Stampling Company   Solid Table and Tea.   Central Stampling Company   Solid Table and Tea.   dis 3042   Solid Table and Tea.   dis 3042   Solid Soli	earns'dis Spoke Trimmers. onney's	30&10 @ 30&10&10 \$	No. No.
State   Contral Stampling Co.   Stat.   dis 33942   Solid Table and Tea.   Central Stampling Company   Solid Table and Tea.   Central Stampling Company   Solid Table and Tea.   dis 3042   Solid Table and Tea.   dis 3042   Solid Soli	earns'	foz \$9.00, dis 20&10 \$ 00 \$ doz, dis 55&10 \$ \$ doz \$9.00, dis 20 \$	No. Cha Mas
Solid Table and Tea, Central Stamping Company a list of State 2 of 18 18 18 18 18 18 18 18 18 18 18 18 18	Spoons and Forks.	11at Ala 2214&0 d	2-Pl 3-Pl 3-Pl
Meriden Brit. Co., Hogors	Solid Table and Tea, Central Sta	amping Company's dis 331/42 %	
	lver-Plated— Meriden Brit. Co., Rogers.	dis 50 \$	Cot
	Wm. Rogers Mfg. Cod Simpson, Hall, Miller & Cod	dis 50&10 @ 60 % lis 50&10@50&10&5 %	Par
	Holmes & Edwards Silver Co Cast Steel, Silver Plated	dis60 @ 60&10 %	Fi St Pa
Squares	\$15; Tables, \$30.	dis 50 @ 50&10 \$	He
Staples.  ence Staples, Galvanized.	Springs.	60&10 @ 60&10&10 \$	Ti M
Staples.  ence Staples, Galvanized.	Squares.	dis60&5 @ 60&10 % .dis 70&5@70&10&5 %	Ba De
Staples.  ence Staples, Galvanized.	y Square and T Bevels	lsdis 60&10 %	Sau Sau
Stone	Staples. ence Staples, Galvanized	P B, 434 @ 4366	St
Stone	Steelyards Stocks and Dies.	dis 40&10@50&5 \$	H R W
### Stove Pollish   Property   Pr	Lightning" Screw Plate Stone.	dis 10&12@25 %	Bau
### Stove Pollish   Property   Pr	and Stoneashita Stone, Extra	Sups, 0566 & D, 2566 & D, 256	Smi
### Stove Pollish   Property   Pr	ashita Stone, No. 1. ashita Stone, No. 2. ashita Slips, No. 1. Extra	# m, 20¢	Joh Pen Api
### Stove Pollish   Property   Pr	rkansas Stone, No. 1, 4 to 6 in rkansas Stone, No. 1, 6 to 9 in	₩ B, \$1.45@1.50 ₩ B, \$1.75	Bon
### Stove Pollish   Property   Pr	urkey Slips, Chase	# 10 8 lb., # 15,00# # 15, \$2.00	Stee
Arter Lite Stove Emmet. # gross, \$1.3 attes Lite Stove Emmed. # gross, \$1.3 attes Lite Stove Emmed. # gross, \$1.5 attes Lite Stove Emmed. # gross,	Stove Boards. uffalo Zinc, S. S. & Co	# B, 31@32#	
Arter Lite Stove Emmet. # gross, \$1.3 attes Lite Stove Emmed. # gross, \$1.3 attes Lite Stove Emmed. # gross, \$1.5 attes Lite Stove Emmed. # gross,	seph Dixon s	P gro \$8.00, dis 10 %	Iru
Arter Lite Stove Emmet. # gross, \$1.3 attes Lite Stove Emmed. # gross, \$1.3 attes Lite Stove Emmed. # gross, \$1.5 attes Lite Stove Emmed. # gross,	Mirror"	# gro \$6.00, dis — \$ # gro \$4.75 net	M M M
Fredde	ising Sunixon's Plumbagoovnton's Noon Day, # gro	# gro \$5.75 net	S1 S1
Packs, Brads, &c.	arior Pride Stove Enamel ates' Liquid, 2 3 # gal \$1.00 .90	5 10 gal. cans .75 .65	81 81 T
Tap #607eFs	et Black apanese areside		A A Bra
Tap the orers.  Tap the orers.    Comparison	Macks, Brads, &c. List, Sept. 1, 1882, and suppl merican Iron Carpet Tacks, air	lement. Jan. 1, 1886 kindsdis 75&10 ≰	Bar Wir Mal
Tap the orers.  Tap the orers.    Comparison	wedes Iron Carpet Tacks. all kinds wedes Iron Carpet Tacks all kin wedes Iron Wire Carpet Tacks.	adsdis 72%&10 %	Stee
Tap the orers.  Tap the orers.    Comparison	wedes from Tacks wedes from Uphoisterers' Tacks inned Swedes from Tacks	dis 70&10 % dis 70&10 % dis 70&10 % dis 70&10 %	Piet Bar Wir
Tap the orers.  Tap the orers.    Comparison	in'd Swedes Iron Uphoisterers' imp and Lace Tacks inned Gimp and Lace Tacks	Tacksdis 70&10 %dis 70&5 %dis 70&5 %	Gre
Tap the orers.  Tap the orers.    Comparison	opper Tacks opper Finishing and Trunk Nai	dis 60&5 %	V V Baz
Tap the orers.  Tap the orers.    Comparison	inishing Nails	dis 55&10 %	Bax Coe Coe
Tap the orers.  Tap the orers.    Comparison	inned Trunk and Clout Nails	dis 60&5 %	Coe
Tap the orers.  Tap the orers.    Comparison	ommon and Patent Brads Inned Capped Trunk Nails	dis 60&5 %	Ster Ben Ben
Tap the orers.  Tap the orers.    Comparison	eathered Carpet Tacks	dis 45 %	Ben Ben
Tap the orers.  Tap the orers.    Comparison	noe Finders'List Ju ining and Saddle Nails, List Jar Silvered	ne 1. 1886, dis 10&5 %	Rei A'k The We
Tap the orers.  Tap the orers.    Comparison	Japannedoubie-pointed Tacks	dis 20 %	Bon Alv All
Tag   Section	teel wife practs, it. as it. mig. Co	/	Acr.
In Case.  In Case.  Thimble Skeins.—See Skeins.  Ties, Bale.  teel Wire, Standard list	ommon and Ring	os. 1. 2, 4—dis 20&10 \$ 8. 13, 14—dis 25&10 \$	Acr Wa
In Case.  In Case.  Thimble Skeins.—See Skeins.  Ties, Bale.  teel Wire, Standard list	nterprise Mrg. Co	dis 20&10 %	Add
In Case.  In Case.  Thimble Skeins.—See Skeins.  Ties, Bale.  teel Wire, Standard list	merican pring	dis 25&10 % 	Exc Exc
trai Stamping Co., list June I, 1886, dis26.24 g. 4 Extras some dis26.24 g. 4 Extras some dis26.24 g. 4 Extras some dis26.25 g. 4 Extras some dis26.25 dis26	Thermometers. In Case Thimble Skeins.—See Skeir	dis 80 @ 80&10 \$	· M Nov
trai Stamping Co., list June I, 1886, dis26.24 g. 4 Extras some dis26.24 g. 4 Extras some dis26.24 g. 4 Extras some dis26.25 g. 4 Extras some dis26.25 dis26	Ties, Bale. teel Wire, Standard list Tinners' Shears, &c.	dis 50&10 %	No. No. Pee
trai Stamping Co., list June I, 1886, dis26.24 g. 4 Extras some dis26.24 g. 4 Extras some dis26.24 g. 4 Extras some dis26.25 g. 4 Extras some dis26.25 dis26	nears and Snips (P. S. & W.)., , unches.—See Punches. nips, J. Mailinson & Co	dis 20 @ 25 \$	Pee
teeed, 8, 8, & CO.   dis 30&2 %   times given.   Jpanned, 8, 8, & CO.   dis 25&10&2 %   times given.   Jpanned, 8, 8, & CO.   dis 35%42 %   Tobacce Cutters.   & Entry   Ent	Tinware.	Cen-   188d,	Uni
Emped. S. S. & Co.   dis 33\\ 482\\ 5\)   En   Tobacco Cutters   dis 20\\ 610\\ 60\\ 60\\ 60\\ 60\\ 60\\ 60\\	tral Stamping Co., list June 1	Ca di Russau somo	Cal
Coof setter         # dos \$8.00 @ \$6.25           il fron         # dos \$18.00, dis 50 g 55.5           ilson*         # dos \$18.00, dis 50 g 55.5           ilson*         # dos \$24, dis 50 g 55.5           ilson*         # dos \$24, dis 50 g 55.5           ilson*         # dos \$50.00, dis 40 g 55.5           Transpm Litters         # dos \$50.00, dis 40 g 50.5	tral Stamping Co., list June 1.	0&2 % (times given.	Uni
Transon	tral Stamping Co., list June 1.	0&2 \$\frac{1}{2}\$ times given. 0&2 \$\frac{1}{2}\$ \$\frac{1}	Uni Em
Transom Litters Andrews dis 50 a San	tral Stamping Co., list June 1.	0&2 % times given. 0&2 % times given. 0&2 % (6&2 %) 6&2 %) dis 20&10 @ 30 % p doz \$5.00 @ \$5.25 p doz \$4.25 z \$18.00, dis 50 a 55 %	Uni Em
ether's improved Self-Locking (Class 301)dis 40 s	trai Stamping Co., list June 1. dis25&2. leced, S. S. & Co	002 % (times given 002 % (times	Dall Emp No No No No No No No No No No No No No
ether's Improved Set Screw (Class 201)dis 45 %   Sta	trai Stamping Co., list June 1. dis25&2. leced, S. S. & Co	002 % (times given 002 % (times	Uni Em, No No No No No No Ei Eur Am, Sup
	tral Stamping Co., list June 1. dls25&2 leced, 8. 8. & Co	002 % (times given 002 % (times	Un Ewe NN NN NN NN NN Eu Am

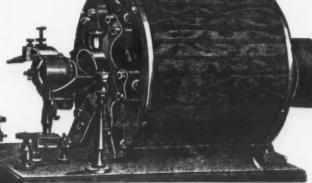
%	Rether's (Class 101)
3	Refher's (Class 101).
% %	Traps.
*	Newhouse
4 11 4	Game, Blake's Patent
8	Mouse, Wood, Choker
8	Mouse, Catch-'em-alive
%	Mouse, Delusion F gross \$18.00, dis 15 %
5	Ideal
%	Trowels
×	Trowels         dis 20&10cc30         \$           Lothrop's Brick and Plastering         dis 15 s         \$           Reed's Brick and Plastering         dis 15 s         \$           Disaton's Brick and Plastering         dis 20&10cc 5 s         \$           Peace's Plastering         dis 20 s         \$           Clement & Maynard's         dis 20 s         \$           Rose's Brick         dis 25 s         \$           Worrall's Brick and Plastering         dis 20 s         \$           Worrall's Brick and Plastering         dis 20 s         \$           Triers         dis 70 s         \$
8	Peace's Plastering
25 d.	Rose's Brick
	Worrall's Brick and Plastering dis 20 % Garden dis 70 %
_	Butter and Cheese. die 25 d
*	Trucks, Warehouse, &c. Penfield Block Co.'s list, 1882
*	Tubes. Boiler.—See Pipe,
*	No. 9, Flax Twine, 14 and 14 b Balls 21¢ 31¢
%	No. 18, " " A and 6 "20¢ 22¢ No. 24. " " 4 and 6 "20¢ 22¢
N N	No. 36, "   4 and 4 " 19¢ 21¢   No. 264, Mattrass,   4 and 4 "   50¢
8	Chalk Line, Cotton, 1 b Balls
	2-Ply Hemp, % and % b Bails (Spring Twine)14% 3-Ply Hemp, 1 b Bails
*	Cotton Wrapping, 5 Balls to b
K	Wool
8	Tubes. Boller.—See Pipe. Twine. No. 9, Fiax Twine, ¼ and ¼ B Balls
* *	Vises. Solid Box
8	Fisher & Norris Double Screwdis 15&10 \$ Stephens'
%	Parker's
* * *	Howard's
8	Mariers Falls
%	V Solid Box. dis 50&10 ⊕ 80 \$ Purallel— Fisher & Norris Double Screw dis 15&10 ⊈ Stephens' dis 25 € \$ Varker's dis 20 € 25 ₹ Wilson's dis 25 € \$ Parker's dis 20 € 25 ₹ Wilson's dis 40 € 65 € Howard's dis 40 € 40 € 40 € 40 € 40 € 40 € 40 € 40
*	Double Screw Leg dis 15&10 s
* * *	Simpson's Adjustable
	Bonney's, Nos. 2 & 3
60	Sargent's
18	Reading
%	Bauer's Pipe Vises
44	Wagen Bexes.
66 56 06	Bauer's Pipe Vises
6¢ 0¢	Penny's
UC	Bonney's
50 75 0∉	WedgesIron. ₽ № 3¼€ Steel. ₽ № 3¼€
00. 7# 2#	Steel # D S%(# Well Huckets, Galvanized. Hill's. # doz _12 qt., \$3.50; 14 qt., \$4.50
~*	Whiting's Flat Iron Band Whiting's Flat Iron Band
1 %	Whiting's Wired Top # dog \$4.00
	Well Buckets, Gatvanized. Hill's
	Whiting's Wired Top # dox \$4.00 Well Wheels—5 in., \$1.85; 10 in., \$2.15; 12 in., \$2.90 Wire. Iron— Market, Br't & Annealed, Nos. 0 to 18., dis 70 60 7254 s
男男男	Whiting's Wired Top # dox \$4.00 Well Wheels—5 in., \$1.85; 10 in., \$2.15; 12 in., \$2.00 Wire. Fron.— Market, Br't & Annealed, Nos. 0 to 18dis 70 66 7256 5 Market, Coppered, Nos. 0 to 18dis 50 85 5 Market Galvanized, Nos. 0 to 18dis 50 85 5
% set et	Whiting's Wired Top
S S S et	Whiting's Wired Top
% set et e	Whiting's Wired Top
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% % et et et et et et 500 500 500 500 500 500 500 500 500 50	Whiting's Wired Top
% ** ** ** ** ** ** ** ** ** ** ** ** **	Whiting's Wired Top
50050 5050 5050 5050	Whiting's Wired Top \$\psi\$ dox \$4.00\$ Well Wheels -8 in. \$1.85; 10 in. \$2.15; 12 in. \$2.90\$ Ivrs- Iron- Market, Br't & Annealed, Nos. 0 to 18. dis 70 69 7256 58 Market, Coppered, Nos. 0 to 18. dis 95 25 58 Market Galvanized, Nos. 0 to 18. dis 95 25 58 Market Galvanized, Nos. 0 to 18. dis 95 25 58 Market Tinned. Tinned list, Nos. 0 to 18. dis 95 25 58 Market Tinned. Tinned list, Nos. 10 to 18. dis 95 25 58 Stone, Bright and Annealed, Nos. 19 to 26. dis 97 25 58 Stone, Bright and Annealed, Nos. 27 to 36. dis 97 25 58 Stone, Galvanized, Nos. 19 to 30. dis 95 25 58 Stone, Tinned, Tinned list, Nos. 18 to 36. dis 95 25 58 Tinned Broom Wire, Nos. 18 to 36. dis 95 38 Annealed Frone, Nos. 10 to 18. dis 334 59 35 30 30 30 30 30 30 30 30 30 30 30 30 30
% % et	Whiting's Wired Top
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% % et	Whiting's Wired Top
5500 5550 5555555555555555555555555555	Weilt Wreels—8 in., \$1.85; 10 in., \$2.15; 12 in., \$2.90
88881 eeeee013	Weilt Wreels—8 in., \$1.85; 10 in., \$2.15; 12 in., \$2.90
5550 555555555555555555555555555555555	Weil Wheels = 8 in., \$1.85; 10 in., \$2.15; 12 in., \$2.90
5555 5555 5555 55555555555555555555555	Weil Wheels—8 in., \$1.85; 10 in., \$2.15; 12 in., \$2.90
5550 555555555555555555555555555555555	Weil Wheels—8 in., \$1.85; 10 in., \$2.15; 12 in., \$2.90
5550 555555555555555555555555555555555	Weil Wheels = 8 in., \$1.85; 10 in., \$2.15; 12 in., \$2.90   Wire   Weil Wheels = 8 in., \$1.85; 10 in., \$2.15; 12 in., \$2.90   Wire   Wire   Struck
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**************************************	Weil Wheels—8 in., \$1.85; 10 in., \$2.15; 12 in., \$2.90
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第元第二章 eeeeee0110 5555   第五元元元元元元元元元元元元元元元元元元元元元元元元元元元元元元元元元元元	Weil Wheels—8 in., \$1.85; 10 in., \$2.15; 12 in., \$2.90  Weil Wheels—8 in., \$1.85; 10 in., \$2.15; 12 in., \$2.90  Wire.  Irun—  Market, Br't & Annealed, Nos. 0 to 18. dis 70 60 725 6 Market, Coppered, Nos. 0 to 18. dis 60 52 5 Market, Coppered, Nos. 0 to 18. dis 60 52 5 Market, Coppered, Nos. 0 to 18. dis 60 52 5 Market, Tinned, Tinned list, Nos. 0 to 18. dis 60 52 5 Market, Tinned, Tinned list, Nos. 0 to 18. dis 60 52 5 Market, Tinned, Tinned list, Nos. 10 to 18. dis 60 5 8 5 tone, Bright and Annealed, Nos. 10 to 18. dis 60 5 8 5 tone, Bright and Annealed, Nos. 20 to 30 dis 72 6 8 5 tone, Bright and Annealed, Nos. 20 to 30 dis 72 6 8 5 tone, Bright and Annealed, Nos. 20 to 30 dis 72 6 8 5 tone, Bright and Annealed, Nos. 20 to 30 dis 72 6 8 5 tone, Bright and Annealed, Nos. 20 to 30 dis 72 6 8 5 tone, Bright and Annealed, Nos. 20 to 30 dis 72 6 8 5 tone, Tinned, Tinned Ist, Nos. 18 to 30 dis 72 6 8 5 tone, Tinned Broom Wire, Nos. 18 to 24 dis 50 8 Annealed Fence, Nos. 8 2 9 dis 55 8 Annealed Fence, Nos. 8 2 9 dis 55 8 Brass and Copper, new list, Jan. 18, 84 dis 334 4630 3 4 18 50 5 8 18 4 18 18 18 18 18 18 18 18 18 18 18 18 18
第2条第2112 1000	Weil Wheels—8 in., \$1.85; 10 in., \$2.15; 12 in., \$2.90  Weil Wheels—8 in., \$1.85; 10 in., \$2.15; 12 in., \$2.90  Ivrs—  Market, Br't & Annealed, Nos. 0 to 18. dis 70 60 725 6  Market, Coppered, Nos. 0 to 18. dis 60 52 5  Market, Coppered, Nos. 0 to 18. dis 60 52 5  Market Galvanized, Nos. 0 to 18. dis 60 52 5  Market, Tinned, Tinned list, Nos. 0 to 18. dis 60 52 5  Market Galvanized, Nos. 0 to 18. dis 60 52 5  Market Tinned, Tinned list, Nos. 10 to 18. dis 60 5  Stone, Bright and Annealed, Nos. 10 to 18. dis 60 5  Stone, Bright and Annealed, Nos. 10 to 18. dis 60 5  Stone, Bright and Annealed, Nos. 20 to 30 dis 72 6  Stone, Bright and Annealed, Nos. 20 to 30 dis 72 6  Stone, Bright and Annealed, Nos. 20 to 30 dis 72 6  Stone, Bright and Annealed, Nos. 20 to 30 dis 72 6  Stone, Bright and Annealed, Nos. 20 to 30 dis 72 6  Stone, Bright and Annealed, Nos. 20 to 30 dis 72 6  Stone, Bright and Annealed, Nos. 20 to 30 dis 72 6  Tinned Broom Wire, Nos. 18 to 30 dis 50 8  Tinned Broom Wire, Nos. 18 to 30 dis 50 8  Annealed Fence, Nos. 8 2 9 dis 65 8  Annealed Fence, Nos. 18 to 14 dis 334,46300x10  Barb Fence. See Trade Report  Wire on Spools Mailin's Spid. Wire, 1 to 16 2 5  Cast Steel Wire. 30 dis 60 8  Mailin's Spid. Wire, 1 to 16 30 dis 50 8  Steel Muse Wire, Nos. 12 to 30 dis 50 8  Steel Muse Wire, Nos. 12 to 30 dis 50 8  Steel Muse Wire, Nos. 12 to 30 dis 50 8  Wire Clothes Lines, Bee Lines.  Wire Clothes Lines, Bee Lines.  Wire Goads.—See Bright Wire Goods.  Wire Goads.—See Bright Wire Goods.  Wire Goads.—See Bright Wire Goods.  Wire Rope.—List May 1, 1886. dis 334 5  Wire Rope.—List May 1, 1886. dis 336 10 8  Cose Fattern, Maileable. dis 40 8  Baxter's Diagonal dis 35 20 10 8  Baxter's Diagonal dis 35 20 10 8  Girard Standard. dis 80 6 8 02 10 9  Baxter's Adjustable dis 40 8 80 6 8 02 10 9  Bents & Call's Mire Hought. dis 80 6 8 02 10 9  Bents & Call's Patern Combination dis 30 6 8 00 10 9  Girard Standard. dis 80 6 8 00 10 9  Bents & Call's Patern dis 80 6 8 00 10 9  Bents & Call's Patern Combination dis 30 6
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SANSSELLET STATEMENT SANS SANS SANS SANS SANS SANS SANS SA	Market, Br't & Annealed, Nos. 0 to 18. dis 70 se 72 s
SANSSELLENGE OF THE SANSELLE S	Market, Br't & Annealed, Nos. 0 to 18. dis 70 se 72 s
SERSECULATION OF SERVICE SERVICES SERVI	Market, Br't & Annealed, Nos. 0 to 18. dis 70 se 72 s
SERSECUTION OF SERVICE	Market, Br't & Annealed, Nos. 0 to 18. dis 70 se 72 s
SERSECULATION SOON SERVERERERERERERERERERERERERERERERERERER	Market, Br't & Annealed, Nos. 0 to 18. dis 70 se 72 s
SERVICE CONTROL OF THE SERVICE	Market, Br't & Annealed, Nos. 0 to 18. dis 70 se 72 s
SERVICE CONTROL OF THE PROPERTY OF THE PROPERT	Market, Br't & Annealed, Nos. 0 to 18. dis 70 se 72 s
SERVICE CONTROL OF THE SERVICE	Market, Br't & Annealed, Nos. 0 to 18. dis 70 se 72 s
SARSSECTION OF THE PROPERTY OF	Market, Br't & Annealed, Nos. 0 to 18. dis 70 69 7256 6
SANSTRUCTURE OF THE PROPERTY O	Weil Weels—8 in., \$1.85; 10 in., \$2.15; 12 in., \$2.90 Wire Wire From— Market, Br't & Annealed, Nos. 0 to 18. dis 50.65 s Market, Coppered, Nos. 0 to 18. dis 50.65 s Market, Coppered, Nos. 0 to 18. dis 50.65 s Market Galvanized, Nos. 0 to 18. dis 50.65 s Market Galvanized, Nos. 0 to 18. dis 50.65 s Market Galvanized, Nos. 10 to 18. dis 50.65 s Market Tinned, Tinned list, Nos. 0 to 18. dis 50.65 s Stone, Bright and Annealed, Nos. 10 to 18. dis 50.65 s Stone, Bright and Annealed, Nos. 10 to 18. dis 50.85 s Stone, Galvanized, Nos. 10 to 30. 37 to 36. dis 52.65 s Stone, Galvanized, Nos. 10 to 30. 37 to 36. dis 52.65 s Stone, Galvanized, Nos. 10 to 30. 37 to 36. dis 52.65 s Stone, Galvanized, Nos. 10 to 30. 37 to 36. dis 50.55 s Annealed Fronce, Nos. 8 de 9. dis 55 s Frase and Copper, new list, Jan. 18, \$4.dis 334,653.0x 10 Barb Fence. See Trade Report Wire on Spools. dis 55 s Mailin's Spid. Wire, 1 s. ½ \$ 2.34 s sp'ls. doi:10.25 s Cast Steel Wire. See Jines. \$4.00 to 2. dis 55 s Stube Steel Wire. Nos. 13 to 30. \$4.00 to 2. dis 50 s Stube Steel Wire, Nos. 13 to 30. \$4.00 to 2. dis 50 s Wire Clothe, See Bright Wire Goods. Wire Clothe Lines. See Lines. Wire Clothe Lines. See Lines. Wire Gab and black, best quality, \$1.00 sq. ft. \$2 Wire Gab and black, best quality, \$1.00 sq. ft. \$2 Wire Gab and See Bright Wire Goods. Wire Clothe Sines. See Lines. Wire Clothe Sines. See Lines. Gees "Mechanics". dis 50.50 dis 50.24 dis 50.

# and Polishing Materials. Established 1863. Incorporated 1881. THE

THE AMERICAN YNAMO ELECTRO-PLATING MACHINE.

est Plating Machine in the Market.

HEADQUARTERS FOR EVERYTHING THE PLATING AND



IN THE WORLD OF Nickel Anodes,

Largest Manufacturers

Nickel Anodes,
Nickel Salts,
Patent Muslin Buffs,
Polishing Lathes,
Polishing Felt,
Polishing Rouges,
Pol'ng Compositions,
Walrus Leather,
Wood Fmery Wheels Wood Emery Wheels Platers' Brushes, &c., &c., &c.

Zucker & Levett Chemical Co., 538 to 564 W. 16th St., 36 to 40 11th Ave., NEW YORK, U.S. A.

" Ultramarını.
Brown, Spanish.
" Van Dyke.
Dryers, Patent American.
Green Chrome.
" in oil...

Litharge.....
Mineral Paints.
Orange Mineral.
Red Lead American.
Venetian (Eng.) dry.
in oil.
in Indian Dry.
Rose Pink

Bleached Whale, \* gal.... Sperm, \* gal.... Elephant, \* gal...

Raw in oil.

Umber, Surnt, powdered.

in oil.

ikaw, powdered.

in oil.

Vermition, Chicese.

kaylish.

Anecean, Common.

White Lead, American, pure dry

in oil.

White Paris, English Prime. 10 oil. 7 © 7 % of Yellow Ochre, French. 2 & 35 % 5 Yellow Ochre, French. 11 oil. assi'd cans, 11s: keys, 8s. 7 % of Yellow Chrome. 17 © 27 % The Yellow Chrome. 17 © 27 % Zinc White. Amercan No. 1. dry 6 % of 7 % of Princh (Paris Dry). 55 @ 7 % of 11s oil. 10 % 11 % oil.

Oils.

## WHOLESALE METAL PRICES, June 23, 1886.

#### METALS.

ESTAN Dame. Dame N 104 to 1 1 104 to the
IRONDury: Bars, 8-10¢ to 1 1-10¢ \$ 10; pro-
vided that no Bar from shall pay a less rate of duty
than 35 %. Sheet, 11-0¢ to 15-10¢ % b. Band, Hoop
and Scroll, 1¢ to 1 4-10¢ W D. Railroad Bars weigh-
ing more than 25 th & yard, 7-10¢ of 1¢ W tb.
Standard American Pig Iron.

Foundry No. 2. Gray Forge	X		 	19	ton	17.00 @ 17.50
No.						
Carnbroe			 		ton	\$18.50 @ 19.00
Coltness			 	W	ton	19.75 @ 20.00
Shotts			 	16	ton	
Glengarnock			 	. 90	ton	
Gartsbarne				160	ton	
Langloan			 	18	ton	19.50@ 20.00
Summerlee			 	94	ton	
Dalmellington			 	98	ton	18.50 @ 19.00
Eglinton			 	102	ton	17.50 @ 18.00
Clyde			 	. 161	ton	18.00 @ 18.50
			lim.			
Steel, at Eastern	mi	ils.	 		ton	\$34.50 @ 35.00

	ton	
Wrought, # ton,	Scrap. from yard	\$18.25 @ 18 50
Common Iron:	Iron from Stor	10.

Continon fron;
% to 1 in. round and square   10 1.75 @ 1.800
1 to 6 in. x36 to 1 in
Refined Iron:
% to 2 in round and square / so a
34 to 2 in. round and square \
1 to 6 in.x 4 and 5-16 10 2.10 @ 2.30¢
Rods and 11-16 round and sq D 2 @ 2.8c
Rous-78 and 11-10 round and ad
Bands-1 to 6x8-16 to No. 12 10 10 2 @ 2.5¢
"Burden's Best" Iron, base price 10 2.90
Burden's "H. B. & S." Iron, base price, 1 10 2.5¢
Norway Nail Rods
Sheet Iron from Store,
SMEET ATOM ITOM STOTE,

	American.	Cleaned.
Nos. 10 to 16 10 10	2.70 @ 8 €	31/40
17 to 20	8 @	8160
21 to 24		3360
25 and 26 10 10	8.1216 @	33/40
27 W 1b 8	1.25 (0)	8340
28 W To 3	.8716 @ 3.50	64 6
	B B.	ad qual.
Galvanized to 20	₩ 10 5 \$	4360
Galvanized 1 to 24	W To 5360	5 @
Galvanized, 25 to 26	. W To 594¢	536#
Galvanized, 27	P D 6140	594€
Jalvanized, 28	W TO 6940	6340
American Russia	W ID A, 10¢	B, 100
Russia		
American Cold Rolled R. R.	THE TO S CO	7 0

American Cold Rolled B. B W D 5 C 7 C
Iron Wire.—(See Wire.)
STEEL.—DUTY. Ingots, Sars, Sheets, &c., val- ned at 4¢ \( \mathfrak{B} \) for less, 45 \( \tilde{s} \) ad. val.; valued above 4\( \tilde{q} \) and not above 7\( \tilde{q} \) \( \mathfrak{B} \) \( \mathfrak{B} \) \( \mathfrak{B} \); valued above 10\( \tilde{q} \) \( \mathfrak{B} \), \( \mathfrak{B} \) \( \mathfrak{B} \); valued above 10\( \tilde{q} \) \( \mathfrak{B} \), \( \mathfrak{B} \), \( \mathfrak{B} \); \( \mathfrak{B} \) \( \mathfrak{B} \); valued above \( \mathfrak{C} \), cold hammered or pollshed, in any way in addition to ordinary hot rolling, 14\( \mathfrak{Q} \) \( \mathfrak{B} \) \( \mathfrak{B} \) in addition to the above.

#### American Cast Steel. For American Steel, see Pittshurgh on Chrome Steel.

TOOL DECOT OF CHILD	ю у		74	m	/47	7	7	78	*	•	**		**	-	**	v	ш				
net																			0	@	14
Adamantine Shoe	1 B	n	d	1	)į	e	8.												8	00	
Magnet Steel						e.	4		,									1	4	0	
E	m	ri		8	h		8	8	0	e	1										
Best Cast																		聯	n	15	
Extra Cast						,						¥	ì	'n	6	10	63,	á	0	17	
Circular Saw Plate	38.																.1	Ñ	ID	14	
Round Machinery,	U	84	t.														.1	jų.	10	10	-
Swaged, Cast													į,				.1	M	Ib	16	-
Best Double Shear															,		.1	Ď.	D	15	4
Blister, 1st quality																	.1	M	D	14	-
German Steel, Bes	t.																.1	0	10	10	-
2d quality																	.1	1	10	9	-
2d anolity																	- 9	ь	20	146	à

Sheet Cast Steel, 1st quality	.PD	8 #
Sheet Cast Steel, 1st quality	W Ib	15 €
2d quality	1 1b	14 €
3d quality	OI S	12160
TIN DUTY Plates, Sheets, Tagger a 10 W fb; Bars. Block and Pigs free.		
Bauca # 10 24	e @	25 €
Btraits 10 231/4	ie (0)	24 €
English 10 28%	1º @	2416e
Bar W 10 94	00	25 €
Charcoal Tin Plates.		
I C 10x14 225 sheets \$\text{\$\psi}\$ box \$5.00	0	7.50
I C 12x12 225 sheets " 5,25		7.50
F (2 1942 1941 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	75	4 ft +3 ft

I C 10x14 \$25 sheets b bo.		(0)	7.50
I C 12x12 225 sheets "	5.25	(42)	7.50
I C 20x28, 112 ' "	10,25	a	15.25
I X 10x14 225 sheets	6.25	0	9,25
I X 12x12 225 sheets	6,25	@	9.50
I X 14x20, 112 "	6,25	600	9.25
D C 1236x17 100 "	5.00	60	5.50
D & 1236x17, 100 "	6,45	6	7.00
For each additional X add "	1.25	0	2 00
Coke Tin Plate	es.		
Best.	(	Ordin	nary.
I C 10x14	\$4.5	5 66	4.60
I C 14x30		-	-

-	Company.		. craneer 3
I C 10x14 I C 14x20	1.75	\$4.55	<b>60</b> 4.60
1 C 12x12	8.00	4.75	7.2
I C 20x26 112 sheets			10.2
Terne Plat Prime Char. 2d. o	quality		oke.
I C 14x20M.F. \$6,75			
I C 14x20 Old Process			\$6.75
1 C 20x28 "			18,75
X 14x20 \$4.50 @ 4.75 X 14x20. 6.00 @ 6.50		8,50 @	
I X 20x2812.00 @ 14.00 I C 20x20013.50 @		0,00 (	y 0,10

	Tin B	oller I	Plates.		
IXX 14x26, 2	sheets fo	or No. 7.	112 shee	ts 6	% \$12.00
IXX 14x28, 2	66 66	No. 8.	44	6	0 18.00
XX 14x31, 2	64 64	No. 9,	4.6	6	0 15.00
COPPER.	-Dury	Pfr. B			
	201 49.	24 - 461 40	OR OTHER DE	and cont	at City
Copper, 3c			PERFECT /	113651116	ling all
Copper, 8¢	which Co	manuiac	etured (	meluc	ling all
articles of	which Co	opper is a	a compo	includ	ling all
articles of value). 85 g	which Co ad valo	opper is a rem.	a compo	nent	of chief
value). 85 g	which Co	opper is a	a compo	nent	of chief a 1016¢
articles of	which Co ad valo	opper is a	a compo	1014¢	of chief

thicot, mattheore		7.0	161	CCG	10	MAG.
Ingot Anchor		10	ġ	6	10	live
craziers' Copper and Sheathing, ordinary sizes, 16 oz. 7 sq. ft.						
and over				0	17	¢
Braziers' Copper and Sheathing. ordinary sizes, under 16 oz. and				_		-
over 12 oz. W sq. ft	6.9			0	19	
Braziers' Copper, 10 oz. and 12				_		
oz. # sq. ft				0	21	
Lighter than 10 oz. 2 sq. ft				CO.	23	0
Circles less than 84 in. in diam	4			66		e
" 84 in. diam. and over	6.6			a		6
Segment and Pattern Sheets	5.5			GL	121	ė
Locomotive Fire-Box Sheets	6.6					e
Bolt Copper	4 n				18	@
Copper Bottoms, 14 oz. to sq. ft.				_		
and heavier	0.6			0	21	0
Lighter than 14 oz	68				20	0
resta .				40	-	Y .

Lighter than 14 oz	68		60 1	22	d
Tinuing,			-		
4x45, each			shee	9£. 1	6¢
14x48, less than case, each			0.0	1	20
Boiler sizes, 7 and 8 in., each			60	1	àò
Boiler sizes, 9 in., each			0.6	1.	50
Other sizes not larger than 30x60.		M sa.	ft.	22	ie.
Larger than 30x60		5.5			540
Siver-Plated Sheet Copper for	An	alga	mai	tim	cr.
prices furnished upon application	1.	- Bu			B 5
For tinning both sides, acuble th		beve.	amo	1110	É.

prices furnished upon applic	ation.
For tinning both sides, doub	ble the above amount.
O'Neill's Patent Plants	hed CopperNet.
14 and 16 oz. and heavier 27¢ 12 oz. and lighter 30¢ Boiler Siz	es. 11 11 20¢

14 and	(And all sizes not over 20 in. wide.)
	24x48 and 30x60.
4 BHO	16 oz. and heavier
Etlan	sighad Dragg paragraphy 51
1 1011	rished Brass same price as Planished Copper
	Copper Wire, (See Wire,)

sucathing metal.	
Vellow Sheathing Metal, W D18¢	
BRASS AND GERMAN SILVER.	
brown & Sharpe's Gauge the Standard for Meta	l

brown & Sharpe's Gauge the Standard for Metal;	
Brass Manufacturers' Price List, January 17, 1864	Black Lamp-Cusch Painters'

American, cash49	
Bergenport	9
Bergenport.  ZINC—Duty: Pig or Block, \$1.50 \$1 1 Sheet, 2166 \$1 b.	
600 to casks	5.8716
Zinc.—Open	@ 634
Zinc Tubingdis, 10	@ 20
Zinc Tubing-Dis. 25 %.	
Plain	2
Fancy	8
Scotch and Extra Patterns	3
BABBITT METAL.	
N. P. U 10 69	
X	,10
X X	159
J. B	200
WIRE.	
Market Wire Put up in 63 m bund	les.
Nos. 00 to 9, 10, 11, 12, 18, 14, 15, 16,	

	NO6, 00	to 9,	10, 11,	IM,	13, 14,	15, 16,	17, 1
		10	11	1136	1236	14	15 1
						d	
	**						
	Annoni				12	d	18 6236
	Anneal	Conco V	Vivo N	og Na	ad 9. di		6714
		Grape V					1.0178
	Copper	ed Mark	ret Win	6		dis	8, 6214
I	0.6	Bale	Wire,	Nos. 7	to 12	dis	8. 5736
ı	Galvani	zed Mai	rket W	ire	( 44		82 14

alvanused M	lark	et W	ire		::: }	dis	57	368
Sto	ne	or	W	eav	ing	Wire		
os 16	17	18	19	:30	21	22 28	24 25	26
nts 14								
08 27	28	29	30	81	88	88 84	85 86	
ents 28								
os. 16 to 18.								
19 to 26.								70 %
27 to 36.							75 @	75 %
alvanized St	one	Wire	9				- 1	50 g

Committee and the committee of the commi
Steel Wire. Cast Steel, Steel Wire list
Brass and Copper Wire. Old English Gauge the Standard.—Dis 40 @ 25.
Common Brom
High Low and

		Brass	Brass	Copp
Ali	Nos. to No. 16,			
in	clusive	\$0.22	\$0.96	80
No.	17 and 18		.27	
6.6	19 and 20	.24	.28	
16	21		.29	
6-6	200	.26	.30	
4.6	28	.28	.82	
8.6	94		.84	
9.6	25	. 32	.36	
	26	.35	.89	
	27	.38	.42	
6.6	28	42	.46	
6.6	29	.45	.40	
6.6	30	.48	.002	
8.6	81	.51	.55	
6.6	82		.59	
64	38	.59	.68	
6.6	84	.64	.68	
44	35	.70	.74	1.
6.6	640	P240	600	4

" 40	2.60	2.60	5.75
Spring Wire, 2 cer	ats per poun	d advance.	Whit-
ened Wire, 8 cents pe	er pound adva	ance. Flat,	Square
and Half-Round Wi	re, 4 cents a	dvance on	Round
Wire. Fancy Wire, n	ot less than 1	0 cents adv	ance on
Round Wire. Spoo	ling on one-	pound Sp	ools, 12
cents per pound ex	tra. Spooli	ing on ter	-pound
Spools or more 2 cer	nte ner noun	dextra	

Spools or more. 2 cents per pound extra	h.
MISCELLANEOUS TINNERS'	STOCK.
½6 & ½6. Warranted.          Extra.          No. 1 Refined.          No. 2 Solder.          Extra wiping	4 @ 14166 8 @ 18166 2 @ 12166
Hivets.	
Iron and Tinned, new list, Dec. 10, 1881.   In bulk, new list, Dec. 10, 1881.   Copper Rivets and Burrs	dis. 45 \$ 50&10@60 \$

Copper H								300
Nos								70e
		NEO	ve	Rol	in.	-		
American	Screw	Co.	8				d	ls. 7
R. D. O. V							GE	MB. IN
R. & E. M	fg. Co.						di	B. 71
	東7 新	EEN	CH	GI	AS	8.		
	quat 20	1 100	att.	(2 X	200.00	80 de	-4	

Sizes.	1st.	2d.	8d.	4th.	
Bizes.	EFH	IEH	нн	н в	
25 6 x 8 to 10 x 15.,	\$11.50	\$10,50	\$10.00	\$9.50	
40 11 x 14 to 16 x 24	13.00			10.73	
50 18 x 22 to 20 x 30	17,00			13.20	
54 15 x 86 to 24 x 80	19.00				
60 26 x 28 to 24 x 86	20,00	18,50	16,25		
70 26 x 36 to 26 x 44	21,50	20,00	16,50		
80 26 x 46 to 30 x 50	28.50	22,00	19.00		
84 80 x 52 to 80 x 54	25,00	28,00	20,00		
90 30 x 56 to 34 x 56	26.00	24.00	22.00		
94 34 x 58 to 34 x 60	27.50	26,00	23,50		
100 36 x 60 to 40 x 60	31.00	28,00	26.00		

	ist.	2d.	8d.	46
Sizes.	EFH	I E H	нн D	H
25  6 x 8 to 10 x 15	\$14.00	\$18.50	\$18.00	812.
40 11 x 14 to 16x 24	17.00	16.00	15.25	14.
50 18 x 22 to 20 x 30	22,00	20.50	19.00	
54 15 x 86 to 24 x 80	24.00	22,00	20.00	
60 26 x 28 to 24 x 36	26.00	24.00	21.75	
70 26 x 36 to 26 x 44	27.50	26,00	22.50	
80 26 x 46 to 30 x 50	80.00	28.00	24.50	
84 30 x 52 to 80 x 54	81.50	29,00	26.00	
90 90 x 56 to 34 x 56,	33.00	80.50	28.00	
94 34 x 58 to 84 x 60	85.00	84.00	31.00	
100 36 x 60 to 40 x 60	38,00	36.00	34.00	

# Sizes above—\$15 per box extra for every 5 inches

Discount 75 & 10 @ 75 & 10 & 5 %.		
PAPER STOCK, &cc.		
(Dealers' Selling Prices.		
PRES AN COLUMN COLUMN - NO. 1	Cente	# D.
White Shirt Cuttings, No. 1	614 (6)	636
No. 2	534 @	5%
Mill Assorted Whites	0 6	036
Unbleached Muslins	that right	0
City Whites. No. 1	35% sm	9
New Canton Flannels	412.00	200
New Canton Finings	984 (8	996
New Seconds, light	094 68	
Cotton Canvas	775 00	8
Linen Canvas No. 1	A28 (8	779
Seconds, City No. 1	11/4	128
Seconds, City No. 2	A76. 00	196
Colors, # cwt	40	A24
Mania Rope	97/ 0	00
Tarred	278	0.00
Gunny Bagging, No. 1	279 6	294
No. 2.	179 (8)	396
Kentucky Bagging	A 751 GB	156
Kentucky Bagging. Burlap Bagging, No. 1.	Uk a	440
Tar Shakings	175 (8	3.94
Hemp Twine Stock	000	8
Hemp Twine Stock. Hard White Shavings, No.1	977	394
Soft White Shavings, No. 1	284 (2	9 3
White Shavings, No. 2, Soft	01.	00.
White Shavings, No. 2, Soft	1076	078
Ledger and Writing	323	800
Solid Stock	112.0	278
Book Stock, No 1, light	10.2	914
Old Newspapers	11.0	250
Pure Manlias	10.0	184
Hogus Maniias and Hardwares, cwt	60 4 1	100
Commons. & 100 %	55 @	76
Binders' Board Cuttings	140	A.
	77M 550	798

	SPICE HELV AL	26 688					
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**	Western. "		**				GD W
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Mignal							
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		Sund	ries.				
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Grain Em	ery, 300 m	rega					D 778
Flour Em	ery, nnest o	mailty.					474
Frostings.	ery, nnest					30	@ 30
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Pitch							.D.L.D.
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TOBIN-COL	mmon and	Chock-	or or in	men	93	143 Gm	81.71
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3	INTERCHANGEABLE
	LOCK-CORNER SHELF BOXES.
	FOR THE HARDWARE TRADE.
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FOR FLOWERS, CLOTHES, CARPETS, FLOORS, HOUSE PLANTS AND VARIOUS FINE SPRINKLING. THROWS A UNIFORM SPRAY.
A SPRINKLER FOR A THOUSAND AND ONE USES.

Just the thing to sell by the Hardware, Agricultural, House Furnishing and Seedsmen's Trade.

\$2.50 PER DOZEN.

An Atomizer for sprinkling your carpets to settle the dust previous to sweeping. Unequaled for house plants and flowers. For destroying insects on plants, use a few drops of ammonia in the water. The liquid can be thrown on the under side of the leaves and into the flowers. A shower bath for the baby or lap dog. Excellent for sprinkling clothes; no housekreper or laundry should be without one; you will not go back to sprinkling by dipping your hand in water; your clothes will not get wet in one place and remain dry in another. Tobacconists and cigar makers, the finest Atomizer for sprinkling your tobacco. For disinfecting purposes, to be used in hospitals, sick rooms, on walls, floors, clothes, &c. For cleansing wounds in man or breast. This Atomizer sells upon its own merits. Fifty thousand sold in New Orleans during the Exposition.

THE ALFORD & BERKELE CO.,

SOLE AGENTS, P: O. Box 2002. 77 Chambers St., New York.

THE JENNINGS & GRIFFIN MFG. CO., Sole Proprietors of the

The Oldest Auger Works in America. Established by Joshua L'Hommedieu in 1818.

MANUPACTURERS "L'Hommedieu" Ship Augers and Ship Auger Bits.
Ship Auger Pattern Car Bits.
Single Twist Boring Machine Augers. TRACY'S TRENAIL AND SCOTCH PATTERN AUGERS,



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For Blanking, Stamping, Cupping and Drawing.

BRIDGEPORT,



ALEXANDER

ELIZABETHPORT STEAM CORDAGE CO., MANUFACTURERS OF MANILA, SISAL AND TARRED

CORDAGE OF ALL KINDS.

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Quality and Finish. CORRESPONDENCE SOLICITES

And all kinds of Light Grey Iron and Brass Castings of Superior



S

D

#### Hardware Novelties.

#### The Perfection Postal Scale.

The accompanying illustrations, Figs. 1 and 2, represent this scale, which is made by the American Machine Co., Philadelphia. Fig. 1 represents the scales Nos. 100, 101, 105 and 106, which weigh up to ¼ and ½ pand, and Fig. 2 represents the scales weighing up to 4 pounds, Nos. 140, 141, 145 and 146. Both scales are manufactured on the same principle, which is that of the on the same principle, which is that of the company's Perfection scale, a description of which we gave in this department some time ago. It has recently been adapted in the production of these goods to the weighing of mail matter. In the application of this principle the scale is made with a series of small automatic weights, which are out of

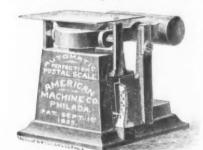


Fig. 1.—Perfection Postal Scale—14 and 14 Pound.

sight, but when letters or small packages are placed on the scale the pointer instantly and without variation indicates the weight on which postage must be paid, always including the fractional part of the unit as a full unit. Thus in scale No. 100, shown in Fig. 1, which weighs from 1 ounce to 8 ounces, any parcel weighing I ounce or less will bring the pointer to the 1-ounce mark, and the weight of more than 1, and not more than 2 ounces will bring it to the 2 ounce mark, and so on. The scale represented the beam, and the beam is notched at each

justment is obtained by this means. In the engraving is shown an attachment by which a pencil may be added to one of the points. The construction of this attachment is such that a pencil of considerable length may be inserted and allowed to wear down. It is not necessary to whittle a pencil, to its detriment, in order to insert it in the holder four sizes of this instrument are made, the bar of the lightest being ½ by ½ inch, and of the largest ½ by 1½ inches. Charles A. Strelinger & Co., of Detroit, Mich., are the sole agents. The engraving shows the medium size a little more than half full size.

#### Prate's Multiform Screw-Driver.

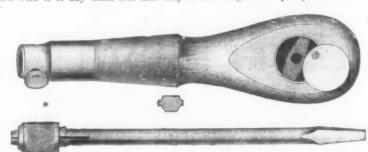
In the cut we show the present form of this screw-driver, which is made by the Mil-lers Falls Co., No. 74 Chambers street, New York City. The handle, as before, serves the purpose of holding the stock furnished with it or any other tool that may

The Ormsby Sash Holder Co., No. 92 Utica street, Boston, are introducing a substitute for weights and pulleys for hanging window sash that they claim has merits over any



Fig. 1.—The Ormsby Spring Roll Sash Balance.

other system in use. The nature of the de vice will be understood by comparing it to the spring rollers which are in common use for window shades. A roller is provided above and in line with each sash, and the sash is connected with the same by means of brass ribbons, as illustraned in Figs. 2 and 3 of the engravings. The spring balance may be aaranged on windows in old houses where weights and pulleys have not been



Pratt's Multiform Screw-Driver.

be advantageously employed in it, as, for | provided, as illustrated in Fig. 2, and it example, a brace bit, a reamer or a chisel.

The stock of this tool is provided with a houses, as shown in Fig. 3. In the one inchuck which firmly holds the driver points, ounce mark, and so on. The scale represented in Fig. 2 has a capacity of 4 pounds, and the poise weight on its beam is movable only to the multiples of the amount of nished with the tool, either end of which are put in and out instantly by turning the sleeve. Ten bits or points are fur nished with the tool, either end of which the series of weights, and is to be used only when weighing heavy packages. Then by moving it to the proper notch to bring the automatic weights into action the pointer will at once indicate the additional weight of the package. Thus in the scale shown in Fig. 2 there are eight I ounce automatic or work off the screw-head. The points, weights, which are indicated at the end of except the one in use, are conveniently stored the beam, and the beam is notched at each in the box provided for them in the handle.

in the other case it is boxed into the top of

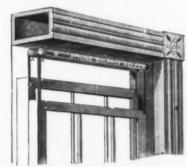


Fig. 2.—The Ormsby Sash Balance Applied to Old Windows.

the frame, so as to be out of sight. In the latter construction the molding forming the finish across the top of the frame is arranged to come off by means of screws, thus affording an opportunity for getting at the balance



Fig. 3 —The Ormsby Sash Balance Applied to New Windows.

for adjusting it where adjustment is necessary. Where it is not desired to remove the face casing E, as shown in Fig. 3, the pocket may be arranged in the top jamb. Metallic bands attached to the pulleys

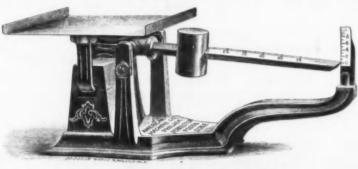
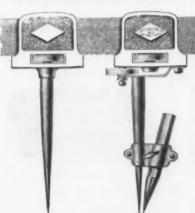


Fig. 2.—Perfection Postal Scale—4 Pounds.

8 ounces only. When weighing a parcel, In addition to the screw-driver points the for example, of more than 13 ounces and not more than 14 ounces, the poise weight must be moved to the 8 ounce notch, when the ord of the beam will at once point to the must be moved to the 8-ounce notch, when the end of the beam will at once point to the 6: 8+6=14, which is the weight for postage. These scales are finished in black japan, ornamented, with brass pan, beam and weight. There are also made with the brass parts nickel-plated. Nos. 100, 101, 140 and 141 are intended for weighing by ounces, while Nos. 105, 106, 145 and 146 weigh by half ounces. The simplicity and accuracy of this scale, and the facility with which packages can be weighed on it, are which packages can be weighed on it, are alluded to, as well as the fact that it is a weight scale, having no springs whatever in its construction. It has recently been placed in the Boston, Baltimore, Philadelphia and Washington post offices on trial, where it is reported to be giving the best satisfaction.

#### Diamond Trammels.

A form of beam compass that will interest draftsmen and mechanics who have oc-casion to sweep large circles is shown in the illustration herewith. In construc-tion the article is a radical departure from forms in previous use. The heads are clamped against the bar by turning screws, the milled heads of which are shown in the en



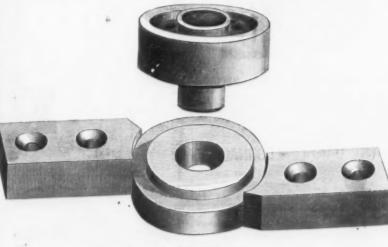
The Diamond Trammels

graving projecting through the casting just below the bar. By means of this screw the heads are fastened at any required point quickly and securely. In loosening the clamp the nut drops away from the bar, which allows the head to slide freely. Extreme accuracy in setting the tool is obtained by a second screw in one of the heads.

creasing the range of the work for which the tool is adapted. The chuck is of such a the tool is adapted. The chuck is of such a character as to hold a variety of small tools such as twist drills, in case it is desired to employ them for any purpose. The stock is of a kind to be used in a brace where there is a large number of screws to be driven. The stock is held in the handle by a roundhead thumb-screw, clearly shown in the engraving. The haddle is of polished roserving. graving. The handle is of polished rose-wood and 7 inches in length. The stock is 1/2 inch around, and is of highly-polished steel, heavily nickel plated. It is the same length as the handle, making the tool some 14 inches in all when the two parts are combined.

#### New Sash Pivot.

A. G. Newman of No. 1180 Broadway, New York City, has recently put upon the market a sash pivot which is shown in the in the top of the jamb and connect with the



New Sash Pivot.

By referring to the engraving it will be seen sash and frame, or sash and sill, as the case ribbons which connect the balance with recently that the point is pivoted directly above the may be, are rabbeted on opposite edges, the sash are indicated by M. Provision is Foundry.

The device consists of two brass sash by means of spools which are inserted castings, one of which is fastened to the frame and the other to the sash, in case the we are informed, is made of the best steel sash is to be pivoted horizontally, and to the sash and sill where the sash is to be pivoted vertically. One part, it will be seen, has a raised circular projection with a hole in the center, in which the pivot of the other part revolves. The opposite side has a project-ing circular rim which fits over the raised part of the other and is pivoted in the center pulley. At each end of the arbor there is a with an iron pivot entering the hole in the pulley, and the two are connected together opposite fixture. The abutting surfaces of the sash and frame, or sash and sill, as the case ribbons which connect the balance with

head of the lead pencil, shown in the cut. By turning the nut on the opposite side the position of the point against the paper or other material to be scribed may be varied as much as ¼ inch. In the use of the trammels, therefore, the head is set as nearly right as possible, and then further adjustment is obtained by this means. In the is not needed the long end of the arbor is cut off to correspond with the opposite end. The company also manufacture, on this same principle, balances which are applicable to large doors, dumb waiters and other fixtures working in vertical grooves. The New York office of the company is Room 93, Tribune Building.

#### MANUFACTURING.

#### Iron and Steel.

The Miller Forge Co., of Pittsburgh, are forging a 25 inch iron shaft for the United States steamship Richmond.

Mr. S. P. Jewett, general manager of the Los Angeles and San Gabriel Valley Rail-road, in California, was in Pittsburgh last week, and placed an order with the Pitts-burgh Locomotive Works for a locomotive for his company's road. Several orders of the same kind will be placed in the future.

The Standard Iron Co. have been incorporated at Wheeling, W. Va., to manufacture iron and steel and to mine coal, by Alonzo Loring, Lewis Delaplain, Daniel C. List, Jr., John T. Jones and Samuel P. Hilberth The capital stock is not to exceed \$100,000.

The courts have been asked to have a re ceiver appointed to take charge of the affairs of the Himrod Furnace Co., of Youngstown, Ohio.

Carnegie Bros. & Co., of Pittsburgh, are busy filling an order for 20,000 tons of steel rails for the Union Pacific Railroad. The rais for the Union Pacific Railroad. The management are replacing the old track with new rails. They are also turning out an order of 600 tons of bridge iron for Galveston, Tex., and are busy making 1300 tons of structural iron for the State building at

Lucy Furnace No. 1, at Pittsburgh, which was blown out some time ago for the purpose of relining and making other repairs, will be blown in again the present week.

The Chicago Safe and Lock Co., of Chicago, report so many orders in hand that they are unable to take large orders at present. The company have added an area of 80 x 128 feet to their main floor space, making the same 80 x 320 feet in size. These extensive works front on both Canal and Clinton streets, and are turning out from 15 to 20

Nearly all of the machinery in the new steel works of Jones & Laughlins, Pitts-burgh, is in place and has been satisfactorily tested. From present indications the works will be put in operation July 15, or not later than August 1. There are six new build-ings, all made of structural iron manufactured by the firm.

The Union Steel Co., of Chicago, began rolling rails on the 11th inst. The other de-partments of the works are also in opera-

W. D. Wood & Co., of Pittsburgh, intend to add five new knobbling furnaces to their mill at McKeesport, and will have them finished in five weeks. A new building will be erected for the new furnaces, which will employ 25 skilled workmen.

The employees of the Frankstown blast furnace, operated by James Pierpoint, at Hollidaysburg, Pa., have been granted an advance of 10 per cent. in their wages.

bliworth, Porter & Co., railroad spike follows: Wharton & Maxwell Co. \$85,000; manufacturers, of Pttsburgh, are shipping 500 tons of spikes to the Chicago, Minneapolis and Manitoba Railroad. They are shipped from Cleveland by lake to Duluth and then to Manitoba. and then to Manitoba.

Cofrode & Saylor, bridge builders, of Pottstown, Pa., have been awarded the con-tract for the ironwork of the new Market street bridge, Philadelphia, by R. A. Malone & Son, of Lancaster, who were awarded the contract for the construction of the bridge at their bid, \$271,000.

Jones & Laughlins, of the American Iron Works, Pittsburgh, will at once rebuild their foundry, which was burned on the evening of the 12th inst. The new building will be fire-proof, and will be 210 feet in length and 104 feet wide.

Colebrook Furnace No. 2 (anthracite), in

Co. will prebably remodel their 16 kilns to the wash and bath rooms.

small order for eye-bars for a bridge in Japan, which is being constructed by English builders. They competed with English firms on the price.

the Lick Observatory on Mount Hamilton has been awarded to the Union Iron Works, of San Francisco, for \$58,850. The dome will be 76 feet in diameter. The iron plate to be thoroughly fire proof. This is to contain their engine and boiler rooms and additain their engine and additain t The contract for the great steel dome of on top of the brick will weigh 37 tons. The moving part of the dome will weigh about 90 tons with wall plate, 127 tons in all. The bid of the Union Iron Works was \$56,850 to construct and set up the dome complete.

At the Etna Iron Works, Newcastle, a

All departments of the Pennsylvania Steel Works, at Steelton, Pa., were in full operation last week.

The blast furnace of the Cleveland Roll ing Mill Co., at Newburgh, Chio, v has just been rebuilt, will blow in soon.

Sloss Furnace No. 2, at Birmingham, Ala., hich was blown out a few days ago, will be remodeled before it is blown in again. Mr. Fred. Sloss, the manager, will introduce some improvements of his own, and expects to have the best furnace in the South.

Work has begun on the substitution of a Whitwell Gordon plant for the pipe stoves of Alice Furnace No. 1, Birmingham, Ala.

The North Branch Steel Co., located at Danville, Pa., have bought out the business of Grove, Grier, & Co., Limited. They are making extensive improvements and additions to the works, and will enter into the manufacture of steel boiler-plates, ship and tank plate, etcal force of the steel force of the ste and tank plate, steel forgings and steel washers, also rolled shapes, to which they devote special attention. Their office in Philadelphia will be at 330 Walnut street.

#### Machinery.

The New York Safety Steam Power Co., of New York, report the following recent sales through their Western office, 64 and 66 South Canal street Chicago: Courier-Journal Job Printing Co., Louisville, Ky., one 8-horse-power engine; Huyett & Smith Mfg. Co., Detroit, Mich., one 6-horse-power engine, one 3-horse-power engine; Singer Mfg. Co., one 6 horse-power engine and boiler: Fraser one of horse-power engine and coner: Fraser & Chalmers, one S-horse-power engine, one to-horse-power boiler; Bain & Turner, one 5-horse-power engine; Fort Wayne Jenney Electric Light Co., for Cheltenham Beach, South Chicago, two 12 x 12 horizontal automatic engines, one o x 12 horizontal automatic engine.

The Hooker-Colville Steam Pump Co., of St. Louis, Mo., are building a large miners' sinking pump for Denver, Col., and another for Quincy, Ill.

The Dustin Mfg. Co., Dexter, Me., re-cently shipped a large drilling machine to Syracuse, N. Y.

The Penobscot River Steam Boiler Works, Bangor, Me., find it necessary to increase their capacity.

The complete outfit of furniture machinery of the Union Furniture Co., of Batesville, Ind., has been supplied by the Egan Co., of Cincinnati, Ohio.

Riehlé Brothers, of Philadelphia, Pa., have just completed a horizontal 200,000 pounds lever testing machine for a chain works at Columbus, Ohio.

The Boston and Albany shops, at Spring-field, Mass., are at work on a new 20 x 26 inch freight locomotive.

The Refrigerator Ice Works, Jacksonville, Fla., have put in new machinery, increasing their daily capacity from 10 to 24 tons.

It is reported that John F. Stephens, of Rome, Ga., will establish boiler works at Birmingham, Ala.

The Mobile Electric Light Co., Mobile, Ala., will increase the capacity of their plant 50 per cent. W. H. Smith, manufacturers' agent, of

Pittsburgh, will remove to Chicago about July 15. Mr. Smith will represent the Abendroth & Root Mfg. Co., of New York City. The Philadelphia water authorities on

Tuesday awarded a contract for 4-inch stop-valves to the Southwark Foundry and Machine Co. The contract for five boilers at the Spring Garden Pumping Station and for two boilers at the Roxborough Pumping Station was awarded I. P. Morris & Co. For one 20,000,000-gallon engine the bids are as

#### Hardware.

The Hartman Steel Co., Limited, of Beaver Falls, Pa., have begun the erection of extensive wash and bath rooms and a coffee-house or lunchroom combined for the use of their employees. It will be a handsome building and will be furnished with some building and will be furnished with improved bathing facilities. The men will be charged a merely nominal sum for en-joying the bathing facilities, and will be furnished with a substantial lunch at all hours at a trifle over cost. When furnished the building will be turned over to the Hartman Mills Relief and Benefit Association, with the understanding that all profits arising therefrom shall go into the treasury of that institution, for its sole out in a few days for the purpose of relining benefit. The upper story will be fitted up and making other repairs. The Ætna Iron Co., who are building a meeting and reading rooms for the Relief new furnace 12 miles beyond Centerville, Hickman County, Tenn., on the Nashville scale has been in operation at the works for and Tuscalcosa Railroad, are putting up 20 16 months past, and has proven so successful and so indispensable as to warrant the colorich, Warner, Ala. The Warner Iron Co. will probably remodel their 16 kilns to the wash and bath rooms.

The Old Colony Shovel Works, at Taun-

increase the capacity of their works by put-ting in new grinding machinery.

E. C. Atkins & Co., Indianapolis, Ind., are putting up a new building to be 66 x 102 feet, three stories, of iron and brick, and intended tain their engine and boiler rooms and addi-tional machinery made necessary by the rapid increase in their business. They refer to their trade this season as having been exceptionally large.

The Penfield Block Co., of Lockport, second stack is just being completed. It is 78 feet high and 16-foot bosh. It is expected that it will blow in in the beginning platform four-wheeled wagons and twoning stronger than for years. An order for platform four-wheeled wagons and twowheeled barrows from the new Erie Expresis causing them to run overtime, with about double force.

An iron casting weighing 5 tons was have recently added 6000 feet to their floor recently cast at the Amoskeag (Mass.)

The Triumph Wringer Co., Keene, N. H., have recently added 6000 feet to their floor space of factory room, and have increased their capacity of daily product to an output

they have put in some special and expensive machinery, rendering their factory, with this addition to their former facilities, especially well adapted for the manufacture of this line of goods.

The D. E. Whiton Machine Co., New London, Conn., have been organized as a joint-stock corporation, with D. E. Whiton as president and L. E. Whiton as secretary. They are to manufacture machinery and

A number of the bolt-makers in some of

#### Miscellaneous.

Edward Kayl, manager of the Phoenix Glass Co.'s works, at Phillipsburg, Pa., proposes to form a co-operative company with a capital of \$30,000 to \$40,000 to operate the Doyle Glass House in that place. The Phenix Co., who own the factory, will put it in as so much stock, while 25 to 50 put it in as so much stock, while 25 to 50 glass blowers will invest as large a sum as possible, on which interest will be paid. The plan of co-operation proposed is that the blowers shall draw only a part of their wages weekly and let the balance stand. If at the end of six months or a year a profit can be paid it shall be done; if not, the outstanding wages are still to be withheld. Several staunch union men from Pittsburgh have joined the enterprise and it is intended to make it a union factory. The is intended to make it a union factory. The Phonix Co. will do all the clerical work and make all the sales. The works are to be in operation by August 1, and will be supplied with natural gas by the Phillipsburg Gas Co.

The fourth convention of the Window Glass Workers' Association will be held in Pittsburgh on Tuesday, July 6, a full representation of delegates from American glass-workers' assemblies being expected.

President Isaac Cline will occupy the chair.

The following table, from the Marquette (Mich.) Mining Journal, exhibits in gross tons the total lake shipments of iron ore from the mines of the Marquette and Menominee ranges for the current season, up to and including Wedne day, the 16th, to-gether with the shipments from the same ports for the corresponding period of last

Name of port.	1886.	1885.
Marquette Escanaba. L'Anse St. Ignace.	214,383 879,170 14,496	130,631 260,669 6,708 19,950
	608,049	417,958

Gain over the shipments from the same ports for the corresponding period of last year, 190,096 gross tons. The shipments from the port of Two Harbors being about the same as at this date in 1885, there remains to be added to the above but the 112, 418 tons already forwarded from the Gogebic mines (which had not begun shipping a year ago at this time) to give the gain over last season in the quantity of Lake Superior ore already sent to market by lake this season. The total foots up the handsome figure of 304,796 gross tons.

The trouble among the coke-workers in the Connellsville region has been satisfactorily settled. The following is the agreement entered into between the operators and the men: Sixty cents per each 100 bushels coal charged for drawing coke; car forking of 30,000 pounds and under of cents; over 30 000 pounds. St. 10. coke; car forking of 30,000 pounds and under, 95 cents; over 30,000 pounds, \$1.10 Day laborers to be paid 15 cents per hour; drivers, \$2 per day; slope and shaft drivers, \$2.10 per day. All track cleaning and wheeling of ashes to be done by the laborers of the company. The regular monthly meeting of the syndicate was held in Pittsburgh on the 18th inst. It was thought that on account of the coke, workers receiving an on account of the coke workers receiving an advance of about 8 per cent. in wages the price of coke would also be advanced, but, contrary to expectations, no advance over present prices was made.

A very heavy flow of gas has been struck in a well at the Moore farm, I mile from Grapeville, Pa.

The Brown Hoisting and Conveying Machine Co., of Clevland, Ohio, have received an order for a plant at Fairport, Ohio, to consist of nine brid3e tramways of 180 feet span each, fully equipped for handling ore and coal. The plant, when completed, will be capable of handling from 6000 to 7500 tons a day of 10 hours.

E. H. Cottrell, of C. B. Cottrell & Sons, manufacturers of printing presses, at Westerly, R. I., has been in Pittsburgh, inquiring into the methods of using gas in forging. He proposes to adopt the use of gas made from naptha oil, as it makes cleaner forgings than coal, and will base his system on that adopted in using natural gas in Pittsburgh. The Government armory at Springfield, Mass., is the only place in this country where this kind of gas is used, but Mr. Cottrell proposes to improve on the method in use there by spraying the cill as a vapor into the air as the latter is. oil as a vapor into the air as the latter is blown into the furnace.

A big swinging derrick on the Public Buildings tower, in Philadelphia, has reached a hight exceeding 300 feet. To elevate the derrick and the engine which accompanies it there are employed four powerful iron screws, 46 feet long and 4 inches in diam-eter each, upon which the swinging super-structure rests, and which are firmly secured in the brickwork of the tower.

The new iron steamer Newburg, built by The new iron steamer Newburg, built by Neafie & Leavy for Ramsdell's line, on the Hudson River, made her first trip on Monday, running 17 miles an hour with ease under 60 pounds of steam. The following are her dimensions: Length, 210 feet; breadth of beam, 32 feet; depth of hull, 11 feet. She is run by a vertical surface comfeet. She is run by a vertical surface com-pound engine of 26 inches high pressure and and 45 inches low pressure, with a 3-foot stroke, and is fitted with a propeller-wheel 10 feet in diameter, having a 15-foot pitch.

of 600 finished wringers. In doing this The steamer has two boilers, each 9 feet

#### WASHINGTON NEWS.

(From Our Regular Correspondent.)

Washington, D. C., June 22, 1886. On Thursday, June 17, according to previously announced programme, Wm. R. Morrison, chairman of the Committee on Ways and Means, moved to go into committee on the whole for the consideration of revenue bills—his bill "to reduce tariff taxes." As A number of the bott-makers in some or the leading Philadelphia factories are out on strike, their demand for an advance in wages, ranging, it is said, from 20 per cent. to 40 per cent., not having been acceded to. not a complete surprise to Mr. Morrison, as he expected the motion to be defeated by four or five, but when he discovered that there was a majority of 17—yeas 140, nays 157—against him he began to realize that tariff revision in the direction of free trade was not popular in the Forty-ninth Congress. The total number present, being 297 out of a possible 325, indicates the exceptional interest taken in the question, even the Speaker voting. Of the 28 not voting, with the exception of one Democrat for whom a pair could not be found and one vacant seat, every vote was paired. In the affirmative vote there were 136 Democrats and 4 Republicans, and in the negative 122 Republicans and 35 Democrats.

A CHANGE OF PLANS.

At a caucus of Democrats who voted for consideration, held last night at the Capitol, Mr. Morrison opened the proceedings by making a brief speech, in which he manifested a very positive inclination to haul off from the tariff controversy. It was finally decided to permit him to exercise his own judgment in the matter of repeating the motion to go into committee of the whole whenever it suited him. This means that he will not trifle with the tariff buzz-saw any more this session. It was proposed as a substitute for the motion to go into committee of the whole to issue a pronunciamiento declaring the views of the parties who stood by Mr. Morrison in this free-trade move ment, and for that purpose a committee of co-operation and consultation, to consist of one from each State having a Democratic advocate of the dectrines of the bill, was to be appointed.

THE PLANS OF THE PROTECTION DEMOCRATS The change of plans of the free-trade wing of the majority in the House will necessitate a change of programme on the part of Mr. Randall and his friends. The gentlemen had a very carefully-prepared bill which it was their intention to move as a substitute for the Morrison bill in committee of the whole. In order to carry out this plan it. whole. In order to carry out this plan it would simply have been necessary for a portion of the 35 Democratic votes against consideration to refrain from voting in order to allow the Morrison bill to be taken up for discussion, so as to get their bill in. Now that the free traders have become stampeded and have de-cided not to try their chances again in that shape, as there was no sign of a change of a single vote and rather a danger of an increased support on the other side, it will be necessary for Mr. Randall and his friends to introduce their bill and have it referred. the committee and take up the bill in par liamentary form. A conference will be held on the plan now to be pursued. As the free-trade ring have abandoned their position and propose to appeal to the country in an address, Mr. Randall and friends propose to appeal to the country in a bill to raise and adjust duties where necessary. Among the articles proposed to be raised are tin plate and iron beams, and reduced steel rails

India-rubber is menaced with a rival. The rubber dealers of Eastern Nicaragua think rubber dealers of Eastern Nicaragua think they have discovered a tree whose gum will give as much satisfaction as rubber, and will, in fact. take its place. They say that the milk of the tuno furnishes a most excellent gutta-percha, equal to the best found in the Eastern tropics, while the number of trees is virtually inexhaustible, and the gum can be produced with profit at 12 cents a pound. a pound.

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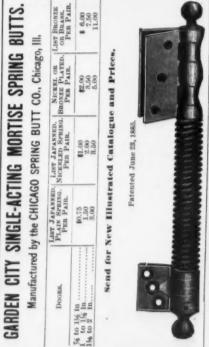
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Every Pan is made of All-Steel Tin Plate, and re-enforced at the edge with a piece of Tempered Steel, 1½ inches wide, extending the length of the front and beyond the edge of the pan, which causes it to be always straight and close-fitting to the floor. Cannot become bent or distorted at the edge, and all dirt or dust can at once be brushed on the pan.

THE STFEL EDGE DUST PAN CO., Manufacturers,

6 Exchange Place, Boston, Mass.

Samuel Martin, Theatrical Hardware, 127 Eighth Avenue, New York.

Æ

# GALLOWAY BOILER

IMPROVED UNDER PATENTS OF 1875 AND 1876.

Safety Economy in Fuel, Low Cost of Maintenance, Dry Steam without Superheating, Large Reserve Power,

ARE THE ADVANTAGES OFFERED BY THIS BOILER IN A PRE-EMINENT DEGREE.

3000 Horse-Power in Progress and for Immediate Delivery. Correspondence Solicited.

EDGE MOOR IRON COMPANY,

SOLE LICENSEE AND MANUFACTURER FOR THE UNITED STATES.

POST OFFICE, WILMINGTON. DELAWARE.

Philadelphia Office, 1600 HAMILTON STREET. - - New York Office, 79 LIBERTY STREET.

JNO. SELLERS, JR., Vice-Pres. ELI GARRETT, Sec. and Treas. GEO. H. SELLERS, Gen. Supt. WM. SELLERS, Pres.



NEW PLATFORM FREEZER.

Sizes: 15, 20 and 25 Quarts.

Just the Thing for Hotels, Restaurants and Saloons.

THE TRIPLE MOTION WHITE MOUNTAIN

## Ice Cream Freezer

STANDS AT THE HEAD in point of mechanical construction, simplicity of operation, durability, and, above all, excellence of production.

The only Freezer ever made having three distinc motions, thereby producing finer, smoother Cream than any other Freezer on the market. Acknowledged by every one to be the best in the world. Over 300,000 in use to-day.

Outside Irons Galvanized, but all inside the can coated with Pure Block Tin.

Tubs waterproof. Packing Tubs and Packing Cans all sizes. Wholesale and Retail.

For illustrated catalogue, price list and trade discounts address the manufacturers,



HAND FREEZER. Ready to Operate.

## WHITE MOUNTAIN FREEZER CO., Nashua, N. H

MANUFACTURERS OF AND DEALERS IN ALL. KINDS OF PLUMBAGO OR BLACK For All Purposes.

ALSO SHIPPERS OF THE CELEBRATED

CINCINNATI MOLDING SANDS

For Stove Plate, Heavy and Light Machinery, Agricultural and Brass Work.

Agents for MONK'S CELEBRATED MOLDERS' TOOLS.

send for Illustrated Catalogue and Price List.

THE LARGEST FACING MILLS EAGLE IN THE WORLD. Capacity, 650 Barrels **HEAVY MACHINERY** STOVE PLATE FACINGS A Specialty.

S. OBERMAYER FOUNDRY SUPPLY MFG. CO.,

CINCINNATI. - - OHIO.

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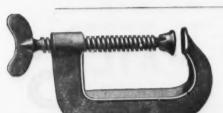
WITH STEEL TOE CALKS.

The Best and Cheapest Shoes Made.

Warranted to Outwear Any Other Shoe.

Six Sizes Each. Blunt and Sharp Calk.





## Eagle Screw Clamps,

BALL and SOCKET SWIVEL.

2, 2 1-2, 3, 4, 5, 6, 7, 8, 10, 12 Inches.

Coach & Carriage Hardware & Fine Mountings Malleable Iron and Brass Castings.

Correspondence solicited. WOODRUFF, MILLER & CO., Mfrs., Mount Carmel, Conn., U. S. A.



DYNAMITE

FOR ALL KNDS OF BLASTING CAPS, FUSE

BLASTING SUPPLIES.

Write for Illustrated Pamphlet. Mailed free Agents wanted.

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The Original Inventors and Manufacturers of the

OSBORN''

Bright Metal Cages, in Brass, Bronze and Silver Plate.

#### SCIENTIFIC AND TECHNICAL.

Thermometers for White Heat.

Messrs. Heisch and Folkard have devised some new thermometers with platinum or porcelain bulbs, by which very high tem-peratures, even those of a wheat heat, can be measured without having to resort to an expensive or troublesome pyrometer. The reading is taken in precisely the same way as at present with an ordinary thermometer, but the result is obtained by the pressure of air inclosed in the bulb, which is exposed to to the heat. This pressure acts directly a vertical column of mercury. The bulb is hermetically sealed, and the instrument is unaffected by changes in the hight of the

Practical Manufacture of Hydrogen

A novel method, invented by MM. Felix A novel method, invented by MM. Felix Hembert and Henry, of manufacturing hydrogen gas on a large scale, has been briefly described by them in a com-munication to the French Academy of Sciences. In a retort superheated steam in fine jets is passed over coke in the state of incandescence. The gas mixture generated, which consists of equal volumes of hydrogen and carbonic oxide, is made to circulate in a second retort, also heated to a circulate in a second retort, also heated to a red glow, containing obstacles of a refrac-tory material, so that the gases are well mixed and heated. At the same time more steam heated to the point of dissociation is admitted into this retort. The theory re-quires an excess of water vapor to insure the complete exidation of carbonic exide, the gases decomposed forming carbonic acid (carbon dioxide) and hydrogen gas. It is claimed that 3200 c. m. of hydrogen gas can be obtained per ton of coke, at a cent of a cort of coke frame act of a coke f cost of 0.015 franc per cubic meter, equivalent to approximately 1 penny per cubic yard. When M. Fages first made hydrogen out of coal and water he could furnish hydrogen gas at 0.044 franc a cubic meter.

#### Earth Currents.

At a recent meeting of the Berlin Meteorological Society, Dr. Weinstein spoke on the earth's currents which were observable in the telegraph wires by the disturbances they caused in the message service, their intensity at times exceeding that of the batteries of So Daniell employed for telegraphing. In order to the observation of the earth's cur-rents, two equal metal plates had since the time of Faraday been sunk into the ground and connected by a wire, in which a gal-vanometer was intercalated. The deviavanometer was intercalated. The devia-tions of the galvanometer needle might be induced as well by an earth current as by a current which arose from the contact of the earth plates with the earth. In the latter earth plates with the earth. In the latter case, however, the current would be very weak when the plates were at a great distance from each other. The case being in point of fact otherwise, however, the currents in question were accordingly earth currents. The measurements of them were achieved by measurements of them were currents. The measurements of them were achieved by means of self-registering ap-paratus, either in the way of photography in England or mechanically in Germany; the earth current was conducted through a coil that, suspended in the interval between a rod magnet and a hollow cylinder magnet, was, under the oscillations of the current, drawn in or pushed out, and by means of a lever inscribed these movements on sootblackened paper.

The direction of the current in the body

of the earth was found by observation of two circuits forming a right angle with each other. In Berlin one circuit proceeded eastward toward Thorn, the other southward toward Dresden. The observations made in Berlin showed a direction of the earth's current from northeast to southwest, while in England the direction went more from north to south, with a slight deviation toward the east, and in France a direction from north to south, with an inclination toward the west, was observed. The earth current showed a perfectly regular daily variation. In the night the earth current is slight; from In the night the earth current is slight; from 8 o'clock in the morning it regularly increases, attains its maximum precisely at 12 noon, thence sinks rapidly till 4 p. m., whence it continues uniformly weak, not to revive till the following morning. A course precisely analogous to that of the earth current was manifested by the earth's magnetism, the connection of which with the electricity of the earth attracted attention from ricity of the earth attracted attention from the very beginning, when disturbances made

hemselves observable. To demonstrate with perfect precision the coincidence of the two phenomena, it was necessary to take for the purpose of com-parison, not a single earth magnetic element, out the earth's total magnetism. The earth's electricity and the earth's magnetism showed, moreover, in their regular daily course their affinity by the simultaneity with which their disturbances occurred. This simultaneity was so precise that in one case the distance between Berlin and Wilhelmshaven could be determined from the time when the dis-turbance of the earth's current made itself felt in Berlin and the time when the magnetic disturbance occurred in Wilhelmshaven. This simultaneity of disturbances haven. This simultaneity of disturbances at distant points of the earth pointed to a cosmical cause. Thus in August last year, at the very time when in Paris the emergence of an altogether unusual solar protuberance was observed, a magnetic disturbance was registered in Petersburg, and a disturbance of the earth's current in Berlin. The earth's current and the earth's magnetism showed further in common the periods of 11 years which coincided with those of the solar spots. In respect of the earth's current this spots. In respect of the earth's current this period could not indeed be demonstrated to a certainty, seeing that the regular observa-tions made respecting it were yet of too recent date, but the regular course of the oscillations warranted the conclusion of a like period being drawn. A period of from two to five days, in which the earth's current and the earth's magnetism showed in their oscillations alternately larger and smaller amplitudes, had, in addition, been detected, although the explanation of the

magnetize the body of the earth, but, on the other hand, against the assumption that the earth's currents were induced by the oscillations of the earth's magnetism, an objection might be raised, namely, that in such a case the earth's currents would have to be case the earth's currents would have to be proportional to the velocities of the escilla-tions of the earth's magnetism, and not to the oscillations themselves. This question can only be decided by further observations can only be decided by further observations and by experiment. In a wide circle cut of telegraph circuits the induction effects of the earth's magnetism might be studied and compared with the earth's currents. The speaker discussed the different theories of speaker discussed the different theories of the earth's electricity set forth by Faraday, De la Rive, Lamont, Elund and the broth-ers William and Werner Siemens, without declaring himself decidedly in favor of any of them. In conclusion he drew attention of them. In conclusion ne drew attention to the series of different jerks which showed themselves in the self-registering curve of the earth's currents on the occasion of every thunder storm. A jerk of this description on the part of the pointer seemed to correspond with each lightning flash.

The New Metal Germanium.

Germanium, a new metal, has been discovered in silver ore from the Himmelsfuerst Mine, near Freiberg. This ore, called it silver, sulphur and a small quantity of by Professor A. Weisbach "argyrodite," was examined before the blow-pipe, who found in quicksilver. Later more complete analyses made the silver contents 73 to 75 per cent.; sulphur, 17 to 18, with 0.21 mercury, a little iron and traces of arsenic. By ordinary methods of analysis 6 to 9 per cent. always escaped determination, and Clemens Winkler finally succeeded in separating germanium, which may occupy the place in Mendelejeff's scale between bismuth and antimony. The New Metal Germanium.

#### Imports.

The following were the Imports of Hardware, Iron, Steel and Metals into the Port of New York for the week ending June 23, 1886:

Bardware

Hardware.

Auffmordt C. A. & Co.
Mach'y, pkgs., 22
Barbour Bros.
Mach'y, cs., 24
Boker Hermann & Co.
Cutlery, cs., 9
Brown Bros.
Pkgs., 88
Clark Geo. A. & Bro.
Mach'y, cs., 362
Dieckerhoff, Raffloer &
Co.

Diach y. 68, 393
Dickerhoff, Raffloer & Co.
Cases, 10
Downing R. F. & Co.
Cases, 3
Dolge Alfred,
Mdse., cs., 4
Folsom H. & D.
Arms, cs., 12
Fougera T. F.
Safety-valves, 2
Field Alfred & Co.
Chains, cls., 2)
Cases, 3
Guns, cs., 2
Hawley E.
Irouware, cs., 4
Hermann Theo.
Old mach'y, case 1
Hernsheimer L.
Mach'y, case, 1
Hartley & Graham,
Guns, cs., 24
Jackson R. D.
Mach'y, cs., 6
Johnson John & Co.
Mach'y, pkgs., 63
Kreig F. M. & Co.
Sew. ma., cs., 14
McCoy & Sanders,
Cases

Kreig F. M. & Co. Sew. ma., cs., 14 McCoy & Sanders, Cases, 2 Moore's Son J. P. Arms, cs., 3 Shoverling, Daly Gales, Mose., cs., 7

Gales,
Mdse., cs., 7
Schloss & Son,
Machines, cs., 8
Schutte Wm. & Co.
Cases, 6
Sheldon Geo. W. & Co
Cases, 15
Wiebusch & Hilger,
Pkgs., 17
Arms, cs., 14
Casks, 4
Cases, 2

Cases, 2 Witte John G. & Bro. Cutlery, cs., 8 Order.
Mach'y, pkgs., 14
Pkgs., 11
Mach'y, box, 1
Pump chains, box, Iron.

Baring Bros. & Co.
Rivet rods, coils, 1042
Ore, kg., 45,000
Bundles, 1380
Bars, 1597
Brockner & Evans,
Wire net'g, rolls, 236
Crocker Bros.
Pig, tons, 500
Spiegel, tons, 217
Greely R. S
Wire coils, 201
Herbet Bros.

Lillienberg N.
Nail rods, bdls., 460
Lundberg Gust.
Bars, 5476
Naylor & Co.
Pig. tons. 220
Spiegel, tons. 310
Plock & Co.
Rods, pkgs., 872
Order,
Rods, bdls., 4152
Sheets, bdls., 4152
Sheets, bdls., 69
Pig. tons. 1220
Spiegel, kg., 304,800
Ore, tons. 6250
Spiegel, kg., 304,800
Rods, coils, 26,763
Ore, bbls., 74,
Spiegel, tons, 1083

#### Bleel.

Downing R. F. & Co.

Downing R. F. & Co.
Casses, 47
Friedberg L. S.
Chains, cs., 11
Hammacher, Schlemmer & Co.
Wire, cs., 8
Mayer, Strouse & Co.
Casks, 30
Order,
Rods, bdls., 34,278
Slabs, 65
Billets, 2947
Blooms, 3468

Blooms, 9468
Hoops, 9468
Hoops, bdls., 401
Tires, tons, 24
Old tires, 25
Old railway leaf
spring, tons, 28
Bars, 8
Strips, cs., 10

Strips, cs., 10 Rails, 2100 Billet ends, tons,50% Metals.

Baring Bros. & Co., Zinc oxide, cs., 50 Bruce & Cook, Tin plates, bxs., 1308 Canadian Bk. of Com. Tin plates, bxs., 1315 Fraser Jas.

Fraser Jas.
Type metal, ingots, 1896
Gonld B. S.
Brass foundry, cs., 5
Hunt John,
Lead pipe, cks., 12
Jimines, Haustedt & Co.
Copper, cks., 3
Copper, cs., 2
Lamarche H. & Son,
Rolled zinc, cks., 60
Rolled zinc, cs., 13
Phelps, Dodge & Co.
Tin pites, bxs., 23, 256
Black taggers, bxs., 24
1911
Pim, Forwood & Co.
Tin pites, bxs., 44

Pim, Forwood & Co. Tin plates, bxs., 41 Witteman Bros. Tin cases, 56 Order, Tin pl'tes, bxs..16,186 Quicksilver, bottles.

Bismuth met., pkgs.

The imports of Hardware, Cutlery and Metals at this port during the week ending

une to were as follows:		
	Quantity.	Value
Brass goods	47	\$3,247
Bronzes	18	1,411
Chain and anchors	27	1,200
locks		981
Copper		66
Cutlery	HI	83,941
Outch metal	13	1.910
Juns		22,005
Iardware		1,700
ron, pig, tons		32,600
ron, sheet, tons.		1.71
ron, spiegel, tons		48,947
ron ore, tons		265
ron, other, tons		16,396
ead, pigs		3,062
Machinery	382	21,576
Metal goods		20,080
Vails		561
Needles	18	3,685
Fickel	3 .	656
Nickel		3,316
atina	3	10,436
Noted work	21	1,000
Plated-ware		10,547
Quicksilver		
Regulus antimony		1,625
Baddlery		2,568
Steel		76,176
Spelter, D	44,092	1,371
Type metal	20.000	4.527
rin, bxs	62,113	246,659
Fin, 5,005 slabs; 545,984 D		128, 29
Wire	87	8.57

NEW AND BEAUTIFUL DESIGNS JUST OUT.

With reference to the question which phenomenon was not yet forthcoming.

With reference to the question which phenomenon was the primary, the earth's current or the earth's magnetism, opposite views were entertained. The earth's election of benzine. The loss is estimated tricity was assuredly not strong enough to at \$15,000.



NESTERN FILES.

WESTERN FILE CO., Limited,

BEAVER FALLS, PA.

ESTABLISHED 1869.

Capacity, 1200 Doz.

per Day.



Every File Warranted.

Files and Kasps of Every Description.

THE BEST IN THE MARKET.

WRITE FOR CATALOGUE AND PRICES.

For Metals of all kinds.

DIAMOND HACK SAY PATENTED.

The combination of long screw in handle and lock-nut renders this the most desirable and useful Frame; secures perfect tension, holds Blades at any required angle, and adapts it to Blades, of different lengths. Blades (patented) warranted of Superior Tempor. DIAMOND SAW CO. 101 Milk Street,

#### An Improvement in Hack Saws. SALEM WIRE NAIL CO.,

SALEM. OHIO.

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TOWER'S (Donohue's Patent) ENGINEER'S WRENCH.

TOWER & LYON, 95 Chambers Street, NEW YORK, U. S. A.

10, 12 AND 15 INCH.

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J. B. MECKLENBORG. Cincinnati, Ohio. N. U. WALKER CLAY MFG. CO., Pittsburgh, Pa

MANUFACTURERS,

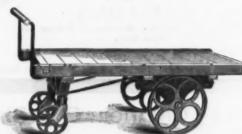
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# WHEELBARROW

The advantages claimed over all others for these PATENT TOOTH Blades are that they NEVER BIND and will OUTWEAR other saws.



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Front Wheels Casters. Truck turns in its own length. Runs on or off elevator or scales at any angle. Is easily dumped by lifting Any size. Send for circular.

Globe Patent Garden Barrow. Capitol Patent Bolted Barrow.

SEND FOR CATALOGUE.



bined Nut and Pipe Wrench. The Strongest Wrench Made.

M. S. BROOKS,

TOPLIFF & ELY, Elyria, Ohio, Sole Manufacturers,



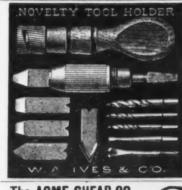
Also Bright Wire Goods for Cotton and Woolen Mills. Wire straightened, cut, milled and bent into any shape, with or without thread. Write for prices on anything made of wire, M. S. BROOKS, Chester, Conn.



CORTLAND ADJUSTABLE S WRENCHES. The Best Machinist's Wrench in the World.

The Ross & Fuller Association,

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The ACME SHEAR CO. Bridgeport, Conn., U. S. A.,
Manufacturers of
CAST SHEARS.

The Best and Cheapest in the market. Lamp Trim ters, Lemon Squeesers, i.e. Picks and Tongs, Nui rackers &c. Send for price list of specialties.

SAYRE PIPE FOUNDRY,

ings for Water and Gas,

SAYRE, PA. Established 1830.

THE PLYMOUTH MILLS.

Trunk Nails Tacks, Clout Nails, Burrs, Wire Nails. PLYMOUTH, MASS.





AMERICAN BOLT COMPANY,

BOLTS AND NUTS, COACH OR LAG SCREWS, Bridge Bolts, Car Bolts, Track Bolts, Washers, Chain Links, BUILDING BOLTS AND IRONS OF ALL KINDS, Forgings, Bolt and Nut Machinery, &c. LOWELL, MASS. MILES F. BRENNAN, Tronsurer. JAMES MINTER. President.

RHODE ISLAND HORSE SHOE CO., cast Iron Pipe and Special cast- Horse, Mule & Snow Shoes the Perkins Pattern.

Works at Valley Falls, R. I. Office, 31 Exchange Place, Providence, R. I. P. W. CARPENTER, President. C. H. PERKINS, Gen'l Manager. R. W. COMSTOCK, Secretary.

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We defy any one to produce its equal. The Pennsylvania Lawn Mower Works have now in their possession a 16-inch Pennsylvania Mower which was sold to an institute in this State, which was used nearly every working day constantly from the day it was purchased until they got it in their possession. This mower cut 500 acres of grass, was sharpened but once during use, and, although it has not been sharpened since it came from the ground, nevertheless will cut the finest paper.

1886 PENNSYLVANIA

Has No Equal,

Surpassing All Others

AND PRONOUNCED

#### "THE BEST."

Illustrated Price Lists sent upon application of the Supplee Hardward Co., Phila., C. McCartv & CO., New York.

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ARKLEY, ALLING & CO., Chicago, Ill.
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ANNEY, SEMPLE & CO., Mincapolis. Minn. cramento. Cal. ER, STEVENS & Co., Grand Rapids, Mich. TRITCH HDW. Co., Deaver, Col. EHOUSE, WEILS & Co., Decatur, Ill. BONESTEEL, Troy, N. Y. BRIDGE & Co., Buffalo, N. Y.



## QUAKER CITY.

QUAKER CITY LAWN MOWER.



#### THE QUAKER CITY

Reduced in Price. NOW, WHY BUY A WORTHLESS MOWER?

Send for List. LLOYD & SUPPLEE HDW. Co., Philadelphia.

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The Cylinder Knives are solid cast steel, made by a patented process; are hardened and tempered in oil; self-sharpening and never require a file or stone after leaving the factory. All the bearings are long, so that the wear on the Mower will be slow, and oil seldom required. It is made to run at high speed, and will not only cut higher grass, but leaves the lawn perfectly smooth.

**Continental Lawn** 



CONTINENTAL LAWN MOWER CO., PHILADA.



Atkins & Co., Indianapolis, Indiana, SILVER STEEL DIAMOND CROSS-CUT.

We are the sole manufacturers of Silver Steel Saws, and enjoy the distinction of not only having first introduced the best Saws, among which are the Champion, Diamond and Dexter, but of improving and maintaining the quality of Saws to a degree which challenges comparison.

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Cross-Cut, Circular, Band and Gang

Are Everywhere Recognized as the Standard of Excellence.

Has a Steel Wire Center to prevent breaking, and is unquestionably the best Knife Sharpener made. A few strokes is sufficient to give the dullest knife a sharp, keen edge. Sample orders solicited.

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The BEST and CHEAPEST material known for

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PROTECTION AGAINST FROST,

PREVENTION OF SPREAD OF FIRE, FREEDOM FROM RATS. MICE & INSECTS. DEADENING OF SOUND.

Used in buildings. It keeps the TEMPERATURE UNIFORM, SAVES largely in the EXPENSE of beating; renders the walls and doors exempt from the CONDUCTING OF SOUND. Completely NON-COMBUSTIBLE, it is very valuable for FIRE-PROOFING.

AN A NON-CONDUCTING COVERING for Steam Pipes, Boilers, Drums, Hot Air and Blast Pipes, and all heated surfaces, and as a Protection against Frost for Waste Pipes.

#### Mineral Wool is Invaluable.

Over Ten Million Pounds in Use.

For Samples, Information and Prices, address The Western Mineral Wool Co.,

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Pike Station, New Hampshire, U. S. A.
Cable Address, "Pike, Haverill."
MANUFACTURERS AND WHOLESALE DEALERS IN BLUE STONE.

o Oil, Water and Dry tstones; Arkansas nita, Turkey, Hindo-and Sandatone

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Manufacture and sell the following celebrated brand of Sporting rowder, known everywhere as Orange Lightning, Orange Ducking,

Orange Rifle, BLASTING POWDER and ELECTRICAL BLASTING APPARATUS. MILITARY POWDER on hand and made to order

Safety Fuse, Frictional and Platinum Fuses. Pamphlets showing sizes of grain sent free.



steel figures and letters, name stamps, type for type writers, chilted-fron figures and letters, stamps for raising letters on wood or metal, branding irons, patterells, house numbers, metal-bodied, rubber stamps, &c. Send for free illustrue.

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Brads or Finishing Nails. Car Nails. Cigar Box Nails. Tin and Slate ROOFING NAILS. WIRE SPIKES FOR TRACK AND DOCK WORK. WIRE TACKS. BLIND AND BED STAPLES AND LINKS. McGregor Nail Boxes, and WIRE NAILS OF ALL KINDS, BARBED OR SMOOTH,

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Manufacturers of CHILLED WHEELS

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THE CELEBRATED Carter County Cold Blast

Charcoal Iron IS USED EXCLUSIVELY BY

NAIL CO., CLEVELAND. O. CRONK



MANUFACTURERS OF THE

CRONK'S PATENT

Wire Cutter, Bender and Plier and Hog Ringer Combined.

Specially Adapted for Use on Wire Fences; also Best in the World for TINNERS' Use. Patent Allowed.

Patent "Special" Improved Locomotive Cylinder Boring Machine Will bore out Locomotive Cylinders IN THEIR PLACES by removing one or both heads and piston, THE END THRUST IS ALWAYS IN EXACT LINE WITH BAR.

Circulars with full description on application L. B. FLANDERS MACHINE WORKS, PEDRICK & AYER, Props.

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CHISEL AND LANCET (or Boardman) POINT. BLIND STAPLES A SPECIALTY. TITCHENER, Binghamton, N. Y.

J. E. QUACKENBUSH & SON,

Porcelain, Mineral & Jet Knobs & Escutcheons.



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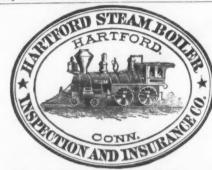


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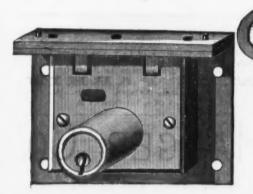
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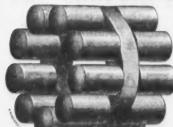
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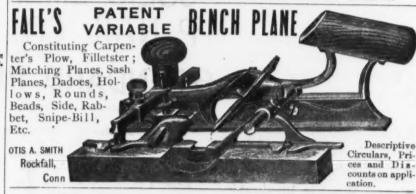
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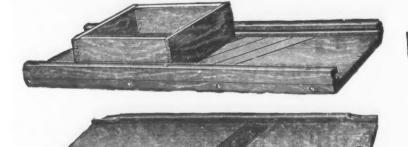


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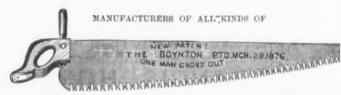
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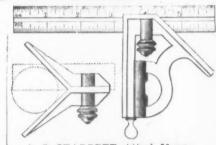
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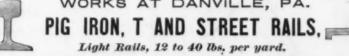
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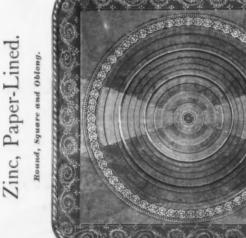
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## THE SCRANTON HANGER FOR 1886



The Simplest.

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#### LANE'S MEASURING FAUCET.

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Price, \$3.00.

For Light or Heavy Molasses, Oils, Varnishes or other Finids.

We warrant these Faucets to be as represented, measuring correctly and working more easily in heavy molasses than any Measuring Faucet in the market. No greece can aford to be without them, and the second of the second

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BEST AND CHEAPEST. ESTABLISHED 1845. Mce, foot of Houston Street, East River, NEW YORK,

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FIRE BRICK And STOVE LININGS.

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es, Blast Furnace Blocks, &c., and in a Specia
partment Unings for Stoves, Ranges and Heaters or
eerlor quality. Miners of and dealers in Wood
dge, N. J., Fire Clay and Fire Sand and States
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Successor to GARDNER BROS., MANUFACTURER OF STANDARD SAVAGE" FIRE BRICK,

TILE & FURNACE BLOCKS, OF ALL SHAPES AND SIZES and Shipper of "Mount Savage" Fire Clay. WORKS, Ellersile, Allegheny Co., Md.
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All dimensions of Firebricks and Shapes, Fire Clay for Furnaces, Coke Ovens, Boil-ers and Patent Grate Linings. Drain Tile, Street Paving Blocks and Fire-Proof Hol-low Bricks for Buildings. BIRMINGHAM, ALA

AIKIN & LIGHTON, Iron City Foundry and Machine Works.

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LARGEST LINE OF WROUGHT CARRIAGE FORGING MADE BY ANY HOUSE, Send for Catalogue and Discount Sheet.

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We are now prepared to supply our subscribers with an excellent self-binder for their papers, a cut of which is annexed We call attention to the low prices at which it is offered. Address all orders to DAVID WILLIAMS,

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PHILADELPHIA, PA., U. S. A., May 26, 1886.

Co. Co. Co. Co. Co. McCune, Lonnis & Gris wold.

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are Co. isey, Sterrit & Co. . Scott & Co. V. Stevenson & Co. amier Bros.

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DEAR SIR :

In reply to your inquiry we hand you the enclosed list of jobbers who are in a better position to serve you with Bryant's Patent Egg Beaters than we are, as they have (and keep) a stock of these goods. If you order from your jobber he may have them, as this list is only correct to date.

Truly,

PAINE. DIEHL & CO. PAINE, DIEHL & CO.

a.—Wolf & Co.
Haines & Robinson.
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Kee & Ingerty.
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Cincinnati — F. H. Lawson & Co.
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ST. PAUL—Farwell, Osman & Jack—
St. Paul—Farwell, Osman & Jack—
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Fletcher.
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St. Louis—Simmons Hardware Co.
Hilger Hardware Co.
Hilger Hardware Co.
NEBRASKA.
OMAHA—Rector & Wilhemy Co.
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SYRACUSE—S. P. Pierce & Sons.
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"Sidney Sucparu a Control of Cont Co. St. Louis Stamping Co. Lauderback, Gilbert &

CLIMAX Barn Door Hangers,

Barn Door Hangers, FOR WOOD TRACK.

Moore's Freight Car Door Hangers, Baggage Car Door Hangers,

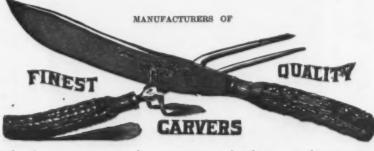
RAILROAD HANGERS, Parlor Door Hangers.

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165 Lake St., CHICAGO.



AMERICAN CUTLERY CO.,



TABLE

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Bellows Manufacturer Johnson Street

Cor. 22d St., CHICAGO, ILL.



June 24, 1886.	Т
PHILADELPHIA.	Sad Irons. → to 10 b.       # b 2.35(2.50¢         Mrs. Potts' Patent.       dis 35@40 \$         Stone.       8
Terms, 30 days. For 60 or 90 days, interest added at 8 per cent. per annum.	Washita Extra. \$\Pi\$ 30\$   Washita No. 1 \$\Pi\$ 20\$   Washita No. 2 \$\Pi\$ 20\$   Washita No. 2 \$\Pi\$ 20\$
Anvils.  Peter Wright's, # B	Washifa Extra.         \$\Pi\$ 306 Washifa No. 1.         \$\Pi\$ 306 Washifa No. 2.         \$\Pi\$ 256 Washifa No. 2.         \$\Pi\$ 20¢ Washifa No. 2.         \$\Pi\$ 50¢ Washifa Silps.         \$\Pi\$ 50¢ Washifa Axe.         \$\Pi\$ 50¢ Washifa Axe.         \$\Pi\$ 50¢ Washifa Axe.         \$\Pi\$ 50¢ Hindostan Oil Stone No. 1.         \$\Pi\$ 46 \( \tilde{\pi} \) Find Head and Alps.         \$\Pi\$ 50¢ Hindostan Axe.
Apple Parers. Penn Apple Parers. Solve and the Mountain Solve Solv	Hindowand alps
	Round Head Brass
Axes.   Hunt's Kentucky and Yankee, \$\psi\$ doz. net \$7.00   William Mann, \$\psi\$ doz. net 7.00   Favorite \$\psi\$ doz. net 6.00   Beveled Axes and 50¢   Double Bit Axes. net \$15.00 (a) 13.0¢   Loveland Axes 6.60	German Silverdis 50 @ 50&5 %
Auger and Auger Bits.—New List January 7	Springs.—Torrey         dis 50 %           Gem No. 3 small Japanned         \$2.00 \ dis 50 & 10 %           Gem No. 2 medium Japanned         2.75 \ dis 50 & 10 %
Suell's Augers and Bits	Other Standard Springs. dis 50&10@60 % Warner Door Springs, a doz. \$2.50. dis 40&10 @ 50 % Standard Spring Hinges—
Cook's Auger Bits and Augers. dis 55 y Snell's Ship Augers. dis 15 @ 20 y Watrous' Ship Augers. dis. 15 @ 20 y Bönney's Fat. Hol. Augers, list \$48 \pi do dis40\pi 10 \pi Stearns Pat. Hol. Augers, list \$48 \pi do sdis. 25 \pi 10	Single No. 0, \$\psi\$ doz. net
Elght and Commondis. 50 %	Stove Polish.—Gem         # gross, \$4.50, dis 10 %           Dixon         6.00, dis 10 %           Fire Fly         \$3.00 gross, net           Tacks         Correlated Associated
Belis, Bevin Bros. Mfg. Co. Light Hand Belis	Britannia, Poardman's. dis 00&10 g. Britannia, Parker's. dis 00&10 g. Britannia, Parker's. dis 00 & 10 g. Springs.—Torrey dis 50 g. Springs.—Torrey dis 50 g. Springs.—Torrey dis 50 g. Springs.—Torrey dis 50 g. Springs.—10 g. Spring
Hering Machines	Traps. Genuine Oneida—Newhouse
Upright, without AugersList, 85.50 \\ Angular. without AugersList, 6.75 \\ MoltasEastern Carriage Bolts, new list, June 10, 184 \\ MoltasEastern Carriage Bolts, new list, June 10, 184 \\ MoltasEastern Carriage Bolts new list, dis 75&10&5680 \\ Philis. Carriage Bolts new list, dis 75&10@75&10&5	Traps.
Brance Prought Shutter	Wire, Bright or Annealed, No. 0 to 18,
Barber's Old Style	## 176   ##
Clin Solve   Cli	Galvanized. Nos. 7 to 18Market List. dis
Brita: Cast Fast Joint, Narrow. dis 60 % Cast Fast Joint, Broad dis 60 % Cast Loose Joint, Narrow.	Wringers, Pearless No. 214 427.00 Pearless No. 214 31.50 Universal No. 24 27.00 Universal No. 2 27.00 Universal No. 2 31.50 Universal No. 2 31.50 Universal No. 2 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Cast Loose Joint, Broad. dia Cast Acorn, Loose Pin. 70 @ 70&10 %	Novelty No. 3,
Batta: Cast Fast Joint, Narrow	PITTSBURGH.
Wrought Narrow Fast	Merchant Iron.  TERMS.—Note or acceptance at 60 days, with current rate of exchange on New York, or a discount of 2.2
Parker	rate of exchange on New York, or a discount of 2 F cent, for cash if remitted within 10 days from date of invoice.  For fuctuations and discounts on card
@ 60&5 \$ ChainsGerman Halter and Coil, list June, 1884	rates see weekly Pittsburgh Trade Report. The following are card rates. Flat Bar.
Best Proof Coll Chain—English.  9 3 54 54 5 44  3 16 4 5 16 4 7 16 34	1½ to 4 by ½ to 1 2.0¢ 1¼ and 1½ by ½ to ¾ 2.1¢ 1¼ to 6 by ½ to 1 2.1¢ 1 and 1½ by ½ to ½ 2.2¢ 1¾ to 6 by 1½ to 1½ 2.4¢ ½, ¾ and ½ by ½ to 6 £ 2.4¢
Socket Firmer	Rounds and Squares.   1 to 1% 2.0¢   4% to 5 3.5¢   4% 2.6¢   2 to 2% 2.5¢   4% to 7, 2.1¢   5.10 2.5¢   2% to 3% 2.5¢   3% to 4.6. 2.2¢   4, 3.0¢   3% to 4. 3.0¢   5.0°   5
Coffee Mills.—Box and Side (new list Jan. 1. 1880	Obai Iron.
Cutlery.—Waiden Pocket new list net Pennaylvania Knife Co. Landers, Frary & Clark, J. Russell & Co., Lamson & Goodnow Mfg. Co. and Meriden Cutlery Co., Manu- facturers' prices net.	\( \frac{144}{6} \) \( \frac{2.4\text{ 4}}{6} \) \( \frac{5}{6} \) \( \frac{2.8\text{ 7}}{6} \) \( \frac{10}{6} \) \( 1
Door HangersCronk Barn Door HangersNo. 4, \$12.00; No. 5, \$14.00; No. 6, \$1800.dis. 50&56850&10 % American Parlor Door Hanger\$6.00; dis 20&10 \$	% to 1% by 5-16 to % inch
Drawing Knives.         dis. 75&10&5 %           Hart Mfs. Co. 's.         dis. 75&10&5 %           Adjustable Handle.         dis 2006.25 %	Wagon Box Iron. 74 Inch, Nos. 13 & 143.2¢   44 Inch, Nos. 11 & 123.3¢   4
Files	## 16 18 3.06   ## 11 8 12 3.06   ## 18 60   ## 1
Crown and Arrow	1 to 1% by ¼ & 5-16. 2.3e   Laght Bands.
Fluting Machines.   each, \$2.15   dis 35   Eagle-3½ in. roll   each, 2.85   Crown-4½ in. roll   each, 3.69   Crown-6 in. roll   each, 4.00   Crown-8 in. roll   each, 6.60   Crown-8 in. roll   each, 6.60   Geneva Fluter   dis 25   Eavorite com. Fluter and Sad Iron. # doz., \$10.50 net	$\begin{array}{c} 13_6 \text{ to } 6 \text{ by } 3_6 \text{ to } 3.16 \dots 2.5e \nmid 3_6 \text{ & } 11.16 \text{ by } 1_6 \text{ to } 3.16 \dots 2.e \\ 13_6 \text{ to } 6 \text{ by } \text{ Nos. } 11 \text{ & } 12.2.6e \nmid 3_6 \text{ & } 6.11.16 \text{ by } \text{ Nos. } 11, 12.3.3e \\ 1 \text{ to } 19_6 \text{ by } 1_9 \text{ to } 3.16 \dots 2.6e \mid 3_6 \text{ & } 6.9e \mid 6.9e \mid 6.3.16 \dots 5.5e \\ 1 \text{ to } 19_6 \text{ by } \text{ Nos. } 11 \text{ & } 12.2.7e \mid 3_6 \text{ & } 9.16 \text{ by } \text{ & } 6.3.16 \dots 3.8e \\ 1 \text{ & } 6.16 \text{ & } 10 $
	Hoop Iron.  14 to 4. Nos. 18. 14. 15.2.8¢ 1 4. Nos. 19 and 20. 3.7¢
** dos\$3.00 3.75 4.25 4.75 5.25 6.00 7.00 8.00 9.00 No 6 1 2 3 4 5 6 8	Hoop   Iron.   Hoop   Iron.   14
Yerges & Plumb's, new list	14 to 2, No. 223.5¢ 11.16, Nos. 19 and 20. 3.9¢ 15-16, 1 & 114, Nos. 13, 11.16, No. 21
Disston Loop Handles Cross-Cut33¢ pair net Hoynton Loop Handles Cross-Cut20¢ pair net Hatchets.	17 & 18
Yerkes & Plumb. new list	1 10-10, 1 of 196, NO, 22,, 10 96, NO, 23,
Hay and Straw Knives, Lightning. \$\P\$ doz. \$18.00 dia 20 \$\frac{1}{2}\$ Electric. \$\P\$ doz. \$10.00 \$\tilde{0}\$ 12.00 \$\tilde{0}\$ Wadsworth. \$\P\$ doz. net dis \$35.55 \$\tilde{0}\$ 5\tilde{0}\$ 5\tilde{0}\$ 5\tilde{0}\$ 5\tilde{0}\$ 5\tilde{0}\$ 5\tilde{0}\$ 6\tilde{0}\$ 5\tilde{0}\$ 5\tilde{0}\$ 6\tilde{0}\$ 5\tilde{0}\$ 5\tilde{0}\$ 6\tilde{0}\$ 5\tilde{0}\$ 5\tilde{0}\$ 6\tilde{0}\$ 5\tilde{0}\$ 5\tilde{0}	74, No. 21     3.5¢     9-16, No. 21     4.4¢       36, No. 22     3.6¢     9-16, No. 22     4.5¢       13-16, Nos. 13, 14 & 16. 3.4¢     9-16, No. 23     4.6¢
tinges. Strap and T	13-16, Nos. 19 and 30. 3.6¢ 1 inch, Nos. 10, 17, 18.4 4¢ 13-16, No. 21. 3.7¢ 14 inch, Nos. 19 & 20. 1.6¢ 13-16, No. 22. 3.8¢ 14 inch, No. 21. 4.7¢
Hinges. Strap and T.  Horse Nails. Nos. 5 6 7 8 9 10 Globe	h, Nos. 16, 17 and 18.3.6¢   16 lich, No. 23
"Pol'ed & P't'd. 24 29 21 20 19 18dis 25@50\$ Saranac	lighter than the lightest indicated. 1.10¢ ₹ 5 extra will be charged for cutting Hoops to specified lengths.
Parker's Cabinet	Barrel Hoops. 134 to 2 in., cut to length. 9 to 11 %, ¥ set of 6 hoops
American Fadiocks. dis 0099£10 @ 0099£10£5 \$ Seandina Vian Padiocks. dis 0099£10 @ 0099£10£5 \$ \$\forall \text{dos} \forall \text{dos.} \forall \forall \text{dos.} \forall \text{dos.} \forall \text{dos.} \forall \text{dos.} \forall \text{dos.} \forall \text{dos.}	Extras for cutting to length all preceding Iron, including Tire
Lanterns.  Huckeyelarge ist, net; small list, net Tubular.No. 0, \$0.75.\$7.00; No. 1, \$8.2568.50 \(\pi\) doz. net	No. 9 & heavier, 2.8¢; Plow Slabs, 3.0¢ · Plow Wings, 3.3¢
Lanterus.  Buckeys	Common, Charcoal, Juniata, Nos. 10 to 143.0¢ 4.5¢ 6.0¢
Lawn and Garden Pumps. Holland Patentlist, \$5.00, dis 10 \$	### ### #### #########################
Long and Short Cutter	All sheets No. 18 and lighter, over 30 inches wide, not less than 2.10¢ extra.  Wood's Patent Plantshed Sheet.
Moinsses (intes.) Enterprise Mfc. Co.'s Measuring Faucets.dis. 20&10 \$ Stebbins' Gates	1st quality (A)
	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
Woodruff	Coal Screen iron.  134 by 96 by 5-162.5¢   1 by 96 by 5-163.0¢  Angle Iron.
Meas Custers   Dixon's   dis 4565 \$ Dixon's   dis 4565 \$ Woodruff   dis 4565 \$ Stowe.   dis 565 \$ Stowe.   dis 565 \$ Stowe.   dis 562 \$ Stowe.   dis 562 \$ Stowers	236, 3, 336 and 4 inch 2.8¢   13¢ by 1, for Pl. Hand 3.8¢   13c, 13d, 2 and 23¢ '' 2.8¢   13c by 3¢ '' 3.3¢   13c inch 2.9¢   13c by 3¢ '' 3.4¢   1 3.1¢
Ogonts. dis. 2022 \$ Ohio and Aubura. dis. 2022 \$ Bailey (8, R, & L. Co.). dis. 2021 \$ Plane Frons.—Ohio Tool Co. dis. 20210 \$	T Rail.  8 b to the yard2.4#   20 b to the yard2.3#
Butcher's. \$5.00 @ 5.25 to & Flumbs and Levels. \$5.00 @ 5.25 to & Stanley's Adjustable. dls. 70&10 \$ stanley's Adjustable dls. 70&10 \$ Flcks. New that. \$69 \$ \$	12 "
Picks.—New list	8 b to the yard 2.4¢ 20 b to the yard 2.3¢ 12 " " 2.3¢ 28 " 232 16 "
Imitation Emerson	Plat Radis.—Punched and Countersunk.       1½ to 2 by ½ to ½ (nch
Rules.—Stanley BOXWOOD	
Deno par	Junista Nail Rods, 6.04; Norway Nail Rods, 7.54; Quard Iron, 3438436; and 5438436; S.54; Quard Iron 3438434 and 5438436; S.74; Drag Bars 2.54; Cyl. & Landside Iron, 3.74; Dropper Bars 3.34; Plow Beam Iron 2.56;
	Naile. åee Pittsburgh Trade Report.
Try Squares, Stanley dis 60&10 % 70&10&70&10&5 % Dission's Try Squares, and 16 & 60&10 % Scythes, Golden Clipper, Damascus Blade, Boxed and Sharpened Lipper, Damascus Blade, Boxed and Sharpened Clipper No. 10, Bronzed Blade, Boxed and Sharpened Saws,—Dission's Hand, Panel and Rip, dis 20&10 % Dission's Circular. dis 56&10 % Cross-Cut No. 2, Plain Tooth dis 46&10 % Cross-Cut Patent Tooth dis 46&10 %	Tool Steel. Classification Adopted April 13, 1886, Steel Association of United States.
Naws.—Disston's Hand, Panel and Ripdis 20&10 s Disston's Circular	ROUND, SQUARE AND OCTAGON.  \$6 to 2. base, 8.0¢ 695 to 7 3.0¢ 14 28 9-32 3.0¢ 25 to 3ext. 1.0¢ 75 to 8 3.5¢ 3-16 5.0¢ 35 to 4 1.0¢ 9-16 to 16 5.5 3-32 10.0¢ 45 to 5 2.0¢ 7-16 to 36 1.0¢ 15 to 6 2.5¢ 5-16 and 11-32 2.0¢
Cross-Cut No. 2, Plain FOOTS   dis 45&10 €	FLATS.
Rowlanddis 60@60&5 \$	2 to 9-16 inches wide x 2 to % inches thickbase, 8.0¢ l

Т	E
ad Irona, s to 10 b	
A   Feun   - to 10 m   m 2.3562.506	888888888877777777776666
Round Head Brass	6 x nez spe acc
Double Pointed Tacks. dis 80 %	69
FR ps.   dis 25	This said said said said said said said sa
Tibned from Wire dis 6 5 6 8 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Dia To
PITTSBURGH.	5 5
Merchant Iron.	336
TERMS.—Note or acceptance at 60 days, with current ate of exchange on New York, or a discount of 2 \$\varphi\$ ent, for cash if remitted within 10 days from date of tvoice.	Ma Ma Ma
For fluctuations and discounts on card ales see weekly Pittsburgh Trade Report. The following are card rates. Flat Bar.	8 0
% to 4 by % to 12.0#   1¼ and 1¾ by % to % . 2.1# ¼ to 6 by % to 1 2.1#   1 and 1¼ by % to %2.2# % to 6 by 1% to 1342.4#   % % % and % by % to % 2.4#	114
Rounds and Squares,	1 8
to 14	192
to 114 Inch 2.7¢   ½ Inch 3.5¢ to ½ " 5.0¢	Th
Wagon Box Iron.   Inch, Nos. 11 & 123.5¢   Mainth, Nos. 11 & 123.3¢   Mainth, Nos. 11 &	114
Heavy Bands.  4 to 6 by \( \frac{1}{2} \) \( \frac{1} \) \( \frac{1}{2} \) \( \frac{1}{2} \) \( \frac^	134 134
kg to 6 by kg to 3-16 2.56 kg kg 11.16 by kg to 3-16. 3.26 kg to 6 by Nos. 11.4 ki 2.5 cf kg kl 11.16 by Nos. 11.4 ki 2.5 cf kg kl 11.16 by Nos. 11.1 ki 2.5 cf kg kg big by kg to 3-16 3.66 kg kg kl 15 by kg to 3-16 3.66 kg kg kl 16 by kg to 3-16 3.66 kg kg kl 16 by kg to 3-16 3.66 kg kg 13.16 by Nos. 11.1 ki 2.5 cg kg 13.16 by Nos. 1.1 ki 2.5 cg kg 13.16	1 54 5
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Hoop   From.   Hoop   From.   Hoop   From.   Hoop   Hoop.   Hoop   Hoop.   H	15, 18 Ro Ro Do Do Foi Ra Ho Au Ple Sh
ghter than the lightest indicated.  1.10¢ * * axtra will be charged for cutting Hoops to pecified lengths.  Barrel Hoops.	Gr Cu Ro
114 to 2 in., cut to length.  to 11 B, Wast of 6 hoops	She She
Common.         Charcoal.         Juniata.           0s. 10 to 14.         3.0¢         4.5¢         0.0¢           0s. 15 to 17.         3.3¢         4.8¢         6.¢           0s. 18 to 21.         3.0¢         5.1¢         6.6¢           0s. 22 to 24.         3.8¢         5.3¢         6.8¢           0s. 25 and 26.         4.0¢         5.5¢         7.0¢	She di She di Fla
0.28	Fla
American Galvanized Sheets. (Soho C. H. B.) Brand. Patent Leveled: 08. 14 to 20. 1.2¢ No. 27. 1.5¢ 08. 24 to 24. 1.3¢ No. 28. 1.0¢ 08. 25 and 26. 1.4¢ No. 29. 1.8¢ 0734 6 0 \$ diacount.  Coal Screen from. (4 by 94 by 5-16 2.5¢   1 by 94 by 5-16 3.0¢  Angle Iron.	Fia ii Bea
6. 3, 3% and 4 inch 2.8¢   1½ by 1, for Pl. Hand 3.8¢ , 1½, 2 and 2½ " 2.8¢   1½ by ½ "" 3.3¢ inch 2.0¢   1½ by ½ "" 3.3¢ inch 3.1¢   3.1¢   "" 3.4¢	
B to the yard. 2.4¢   20 B to the yard. 2.3¢   35	Ber Ber in Ber in
6 to 2 by % to % inch	on car bei
Nails. See Pittsburgh Trade Report. Tool Steel.	wr
assification Adopted April 13, 1886, Steel Association of United States.	or —i
to 2. base, 8.0¢ [6] & to 7. 3.0¢ [4] & 9.32. 3.0¢ [4] & 5.0	fro

_		
ne	List of Extras.	
8	8 x 7 3.5¢   6 x ½ 1.0¢   56 x 7-16 1.0¢	20 800
0# 5# 0#	8 x 0         2.06         0 x 4         1.06         8 x 35         1.06         8 x 5         1.06         8 x 5         1.06         8 x 5         1.06         1.06         8 x 25         1.56         1.06         8 x 35         1.56         8 x 35         1.56         8 x 35         1.56         8 x 35         1.56         8 x 25         1.06         8 x 36         2.06         8 x 36         2.06         8 x 36         2.06         8 x 144         1.06         8 x 144         1.06	No. of Sec. 2s.
0¢ 0¢	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	0
50	8 x 134 to 56 1.0c 5 x 56 1.0c 16 x 7.16 1.0c	4
50	8 x 14 2.0¢   5 x 14 2.0¢   36 x 5-16 1.5¢	1
86	7 x 6 2.5¢ 4 x 2 to 56. 1.0¢ 16 x 16 1.5¢ 7 x 6 2.5¢	1
5 %	7 x 5 2.0¢ 4 x 16 1.0¢ 12 x 16 3.0¢ 7 x 4 2.0¢ 4 x 17 1.0¢ 32 x 5.10 1.5¢	
3 %	7 x 3 1.5¢ 4 x 3 2.0¢ 32 x 4 2.0¢ 7 x 2 to 5€ 1.0¢ 3 x 3 to 5€ 1.0¢ 32 x 3 to	,
0.8	7 x 14 1.0e 3 x 14 1.0e 36 x 16 4.0e	l
5%	7 x ½ 2.0¢ 3 x ½ 2.0¢ 5-16 x 3-16 4.0¢	ľ
0%	6 x 4 1.5¢ 2 to 56 x 34. 1.5¢ 34 x 3-16 5.0¢	1
0 %	6 x 2 to 36 1.0¢ 36 x 36 1.0¢ 3-16 x 36 20.0¢	l
0%	all unenumerated sizes will be charged at price of next larger dimension in list. Cutting to multiples or	l.
00,	specified lengths, 166 & B for over 24 inch; under, according to contract.	
0 %	CRUCIBLE Steels.  CRUCIBLE STEELS.  CRUCIBLE MACHINERY, ROUNDS AND SQUARES.  \$4 to 3 inchesbass, 4.0   \$4 to 7.16 inextra, 0.5¢  3% to 4 inextra, 0.5¢  \$4 to 5 inextra, 1.0¢  \$4 to 5 inextra, 1.0¢  \$5 to 6 inextra, 1.0¢  \$6 to 11.3¢  10.10 inextra, 1.0¢  \$6 to 11.3¢  10.10 inextra, 0.2¢  Octagons, \$6¢ extra throughout the list, Flats, one-half the extras of the Flat Tool Steel classification.  Cutting to multiples or specified lengths, 15¢  pound for anything over 24 inches long. For lengths  24 inches or less, according to to special contract.  CUCCIBLE SPIRIS STERIS, FLAT.	l
.25 .50 0 %	% to 3 inchesbase, 4.0¢   % to 7-16 inextra, 0.5¢	
0 %	41s to 5 inextra, 1.0¢ 14 and 9-32extra, 1.5¢	ı
0%	% to 11-16 inextra, 0.20	l
net	Octagons, 36 extra throughout the list. Flats, one-half the extras of the Flat Tool Steel classification.	ı
os	Cutting to multiples or specified lengths, 116¢ per pound for anything over 24 inches long. For lengths	l
0 %	24 Inches or less, according to to special contract. CRUCIBLE SPRING STEEL, FLAT.	ı
5.5	CRUCCHILE SPRING STREE, FLAT.  1\(\)\( \)\( \)\( \) to 4 \( \) in, \( \) \( \) \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \\\( \) \\\\( \) \\\( \) \\\( \) \\\( \) \\\( \) \\\(	١
0 %	1 to 3 in. x No. 5 gauge to 7 gauge incextra, 0.5¢	١
54	34 to 3 in. x No. 11 gauge to 16 gauge incextra, 2.0c	١
23 %	% to % in. x No. 10 gauge to 16 gauge incextra, 4.0c	l
5 %	% to % in. x No. 21 gauge to 24 gauge incextra, 5.0¢	1
0.8	tra and under, according to special contract.	1
0 %	\$\frac{1}{5}\$ to \$3 \text{ in. x No. 17 gauge to 20 gauge inc extra, 3.6\$ \$\frac{1}{5}\$ to \$\frac{1}{5}\$ in. x No. 10 gauge to 10 gauge inc extra, 4.0\$ \$\frac{1}{5}\$ to \$\frac{1}{5}\$ in. x No. 17 gauge to 20 gauge inc extra, 5.0\$ \$\frac{1}{5}\$ to \$\frac{1}{5}\$ in. x No. 21 gauge to 22 gauge inc extra, 6.0\$ Cut to length, 24 inches and over, \$\frac{1}{5}\$ per pound extra and under, according to special contract.  \$\frac{1}{5}\$ to \$\frac{1}{5}\$ in inches. base, \$\frac{1}{5}\$ \text{ in } \frac{1}{5}\$ in extra, \$1.5\$\$ \$\frac{1}{5}\$ to \$1.5\$ in extra, \$1.5\$\$ \$\frac{1}{5}\$ to \$1.5\$ in extra, \$1.5\$\$	1
56	16 to 9-16 inextra, 0.2¢ 1/4 inextra, 1.5¢ 1/8 to 7-16 inextra, 0.5¢	l
.50 100		١
	To 21 gauge (for best quality), base, 9.0¢; 22 gauge, extra, 1.0¢; and 1¢ advance of extra for every No. of gauge to No. 28.	l
		١
6	Diameter. Diameter.	١
	To 46 fuch	l
	52 to 54 inch. extra, 3¢ 72 inch. extra, 1¢	I
		I
	MACHINERY ROUNDS AND SQUARES.	١
	\$\frac{1}{2}\$ to \$3\$ in. incbase, \$2.8\frac{1}{2}\$ \$\frac{1}{2}\$ \$\frac{1}{2}\$ to \$1\$ life inch inc0.2\frac{1}{2}\$ \$\frac{1}{2}\$ \$\frac{1}{2}\$ to \$7\$ linch inc0.3\frac{1}{2}\$ \$\frac{1}{2}\$ to \$5\$ inches inc0.5\frac{1}{2}\$ \$\frac{1}{2}\$ to \$6\$ inches inc0.5\frac{1}{2}\$ \$\frac{1}{2}\$ to \$6\$ inches inc0.5\frac{1}{2}\$ \$\frac{1}{2}\$ and \$9.32\$ inch inc0.7\frac{1}{2}\$	İ
ent	436 to 5 inches inc0.5¢ 34 and 9-32 inch inc0.7¢ 536 io 6 tuches inc1.0¢	ı
of of	Machine cutting to specified lengths above 24 in . 0.2¢ Machine cutting to specified lengths, 12 to 24 in . 0.4¢ Machine cutting to specified lengths, less than 12 in . according to contract, but not less than 0.6¢ extra on each size. Shearing or sawing one-shelf of the	I
rd	Machine cutting to specified lengths, less than 12 in., according to contract, but not less than 0 for artists	1
rt.	on each size. Shearing or sawing, one-half of the above extras for cutting.	Ì
		ì
1.1¢	MACHINERY FLATS.   Dasc, 2 kg   154 in. and wider x \( \frac{1}{2} \) to 5.16 in. thick   extra, 0.1c   154 in. and wider x \( \frac{1}{2} \) to 5.16 in. thick   extra, 0.1c   154 in. and wider x \( \frac{1}{2} \) to 5.16 in. thick   extra, 0.3c   154 in. and wider x \( \frac{1}{2} \) to 1 in. thick   extra, 0.3c   154 in. to 154 in. x \( \frac{1}{2} \) to 1 in. thick   extra, 0.3c   154 in. to 154 in. x \( \frac{1}{2} \) to 1 in. thick   extra, 0.3c   154 in. to 154 in. x \( \frac{1}{2} \) to 3 and 5.32 in. thick   extra, 0.3c   154 in. to 55 in. x \( \frac{1}{2} \) to \( \frac{1}{2} \) to \( \frac{1}{2} \) in. to \( \frac{1}{2} \) in. \( \frac{1} \) in. \( \frac{1}{2} \	ı
1.40	134 in. and wider x 8-16 and 7-32 in. thickextra, 0.26 134 in. and wider x 34 and 5-32 in thickextra, 0.36	1
.6e	% in. to 1% in. x % to 1 in. thickextra, 0.2c % in. to 1% in. x 3-16 and 7-32 in. thickextra, 0.3c	I
.8€	% in. to 1% in. x % and 5-32 in. thickextra, 0.5c	ı
0.00	% in. to % in. x 3-16 and 7.32 in. thickextra, 0.5c	1
.8¢	% in. to 1% in. x 1-16 and 3-32 in. thickextra, 2.0c	1
1.20	TIRE STEEL, BOUND EDGES.	ĺ
Lise	% inch and wider x % to 1 inch thick base, 2.6¢ Extras same as Flat Machinery extras.	1
.0∉	TIRE STEEL, SQUARE EDGES.	1
0,00	Throughout the list 0.2¢ more than for same sizes of Round Edge Tire, TOE-CALK STEEL.  114 inches and wider x 3 to 1 inch thick has 2.74	1
	TOE-CALK STEEL.	1
.3¢ .9¢ .6¢	Extras same as Machinery Extras	1
108	SLEIGH-SHOE STEEL. 1½ inches and wider x ½ to 1 inch thickbase, 2.8¢ Extras same as Machinery Extras.	1
.5#	Obblica agreement and a	1
UF	13d to 4 in. x No. 4 gauge to 5s in. inc	1
	1 to 3 in. x No. 5 gauge to 7 gauge inc extra, 0.24	l
.20	% to 3 in. x No. 8 gauge to 10 gauge incextra, 1 0¢ % to 3 in. x No. 11 gauge to 16 gauge inc extra, 2.0¢	l
.3∉ .5∉	% to 3 in. x No. 17 gauge to 20 gauge incextra, 3.5¢ % to % in. x No. 10 gauge to 16 gauge incextra, 4.6¢	١
.8¢	1/4 to 1/4 in. x No. 17 gauge to 20 gauge inc. extra, 5.0¢ 1/4 to 1/4 in. x No. 21 gauge to 24 gauge inc. extra, 6.0¢	1
2.04	and over, 0.1¢ per pound extra; and under, by special	1
1.76		1
70	% to 1½ inches. base, 2.9¢   5-16 inchextra, 1.0¢   ½ to 9-16 inextra, 0.2¢   4 inchextra, 1.5¢   % to 7-10 inextra, 0.5¢	1
1.9¢	% to 7-16 inextra, 0.5¢	1
0¢ .1¢ .9¢	CUTLERY STEEL.  14 gauge thick and heavierbase, 3¢	1
.00	15, 16 and 17 gaugeextra, 1¢	1
.10	Rounds, % diameter and heavier base, - e	1
.30	Double bevel, 14 gauge and heavier	1
.14	Fork Steel, Open-Hearth or Bessemer	1
.2¢	Hoe Steel, Open-Hearth or Bessemer	1
1.5¢	Plow Slabs, Open-Hearth or Bessemer	1
1.30	Shapes subject to special agreement.	1
1.46		1
.6€	pounds of Steel in one shipment.	J
1.7¢	14 gauge thick and heavier. base, 3¢ 15, 16 and 17 gauge. extra, 1¢ 18 and 19 gauge. extra, 1¢ 18 and 19 gauge. extra, 2¢ 18 and 19 gauge. extra, 2¢ Rounds, \$\frac{1}{2}\$ diameter and heavier. base, \$-\phi\$ Double bevel, 14 gauge and heavier. extra, 1¢ Fork steel. Open-Hearth or Bessemer. \$\frac{1}{2}\$ Rake Steel, Open-Hearth or Bessemer. \$\frac{1}{2}\$ degrees the steel. Open-Hearth or Bessemer. \$\frac{1}{2}\$ degrees the Steel Open-Hearth or Bessemer. \$\frac{1}{2}\$ degrees the Steel Open-Hearth or Bessemer. \$\frac{1}{2}\$ degrees the Steel Open-Hearth or Bessemer. \$\frac{1}{2}\$ degrees the Open-Hearth or Bessemer. \$\frac{1}{2}\$	
.70	No freight allowance shall be made on less than 500 pounds of Steel in one shipment.  Miscellaneous.  Axle Biliets	

ell Steel Heads, 95 inch

shell Steel Heads, 95 inches diameter to 105 inches diameter.

Shell Steel Heads, 105 inches diameter to 106 inches diameter.

Shell Steel Heads, 105 inches diameter to 106 inches diameter.

Shell Steel Heads, 105 inches diameter to 106 inches diameter.

Extra on each thickness, 106 leads of the steel Heads, 106 leads of the steel Plates, 106 leads of the steel Heads, 105 leads of the steel, 106 leads of the steel Heads, 106 leads of the steel Heads, 106 leads of the steel Heads, 106 leads of the steel the leads, 106 leads of the leads of the steel Heads, 106 leads of the steel the leads of leads of leads of the steel Heads, 106 leads of the leads of the leads of the leads of 
ce and Floor Plates.
Rolls over 12 inches diameter.
Rolls to inches diameter and under.
Incons over 12 inches diameter indoor,
Incons over 12 inches diameter
Inlons 12 inches diameter and under.
n. and Rolling Mill Castings not other 

Orange Mineral, True, in 100-fb kegs, net 60 days and not subject either to rebate or freight equal transfer for the first transfer for the first transfer for the first form of the first for the first form of t

Window Glass. Discount, 75 % Single Strength; 75 & 10 % Double. Prices current, \$\pi\$ box of 50 feet.

United	Sizes.	A.A.	Α.	В.	C.
25	6 x 8 to 10 x 15	88.75	88,00	\$7,50	87.00
30	11 x 14 to 15 x 24	9.25	8,50	8.00	7.2
48	16 x 24 to 20 x 28	10.75	9.75	8.75	7.71
D-4	15 x 34 to 24 x 30	12.25	10.75	9,00	
(30)	26 x 28 to 24 x 36	13,00	11,50	9.75	
70	26 x 36 to 26 x 44	14,50	13,25	10,75	
80	26 x 46 to 30 x 50	15.00	14.00	11.25	
84	30 x 52 to 30 x 54				
90	30 x 56 to 34 x 56,		****	6117	
114	34 x 58 to 34 x (b),			****	***
100	36 x 60 to 40 x 60	2.2.4.4		22.50	688
	Double Strength.				
25	6 x 8 to 10 x 15	13,25	12.25	11.25	10.5
34	41 x 14 to 15 x 24	14,50	13.25	12.50	11.2
4.8	16 x 24 to 20 x 28	17.25	15.75	14,00	4.08
54	15 x 34 to 24 x 30	19.75	17.25	14.50	2.00
(90)	26 x 28 to 24 x 36	21,00	18,50	15.75	***
70	26 x 36 to 26 x 44	23,25	21.25	17.45	242
5913	26 x 46 to 30 x 50	24,00	22,50	18,00	
264	30 x 52 to 30 x 54	25.75	23,25	19.25	++×
80	30 x 56 to 34 x 56	27.75	25,00	21.75	2.50
5346	36 x 58 to 34 x 60,	29,25	27.75	24,00	***
	36 x 60 to 40 x 60	33,25	30,00	27.75	

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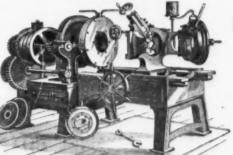
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LOCKS, SASH



<b>8</b> 6	
E  No. 210, Ornamental Iron, Iron Knob, fine finish, Etruscan Bronze. No. 211, Ornamental Iron, Iron Knob, fine finish, Olympian Bronze. No. 212, Ornamental Iron, Iron Knob, fine finish, Pompel Bronze. D. 213, Ornamental Iron, Iron Knob, Nickel- plated. O. 214, Ornamental Iron, Iron Knob, Nickel- plated. Rich Old Gold Inlaid. So. 215, Ornamental Iron, Iron Knob, Nickel- plated, Pale Old Gold Inlaid.	No. 218. Ornamental from, from Knob, Nickel- plated, Riue Old Gold Inlaid. No. 219, Ornamental from, from Knob, Nickel- plated, Green Old Gold Inlaid. No. 220. Ornamental from, from Knob, Nickel- plated, Copper Old Gold Inlaid. No. 221, Ornamental from, from Knob, Nickel- plated, Lemon Ol Gold Inlaid. No. 222, Ornamental Cast Brass, Folished and Leaguered. Leaguered. 2.65
to. 216, Ornamental Iron, Iron Knob, Nickel-	No 223. Ornamental Cast Brass, Nickel-plated 3 60

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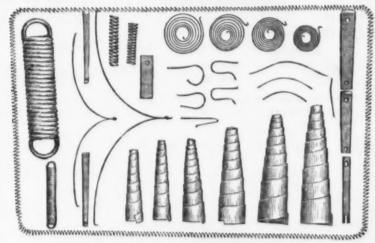


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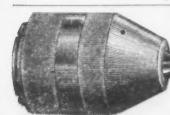
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	Anvil & Vise.  10	76; Ma Ma Ma Ma Ma Ma Ma Ma Ma
	Jenning's Bits   dis 25	Na W
	Axes.       \$\Psi\$ doz \$7.         Blue Jackets.       \$\Psi\$ doz \$7.         Francis Axe Co.       \$\Psi\$ doz \$7.         Romer Bros.       \$\Psi\$ dos \$0.         Romer Bros., Polished Steel       \$\Psi\$ dos \$0.         Axie Grease.       \$\Psi\$ dos \$0.	00 Br 00 Dr 71 Mr 00 Ox 11/2
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0 00	Watson's make Horse & Curry. dis 10 \$ } Rev. List Watson's Cotton. dis 10 \$ } Aug., 1883 Watson's Cotton. dis 10 \$ } Aug., 1883 Sarpet Sweepers. Selection with the Mulber Roll.	M. I
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Co	Compression, Eastern Mfg. Co.:   To Screw	Shet.
CHARRANA	prdage, fanila, usual trade dis 1¢ ₱ ₱ ■ ₱ ₱ 13¢ fisal, usual trade dis 1¢ ₱ ₱ ■ ₱ ₱ 13¢ fisal, usual trade dis 1¢ ₱ ₱ ■ ₱ ₱ 10¢ w Ties 10. 30 5 ft. No. 6 Wire, with toggle ■ ₱ dou \$3.80 10. 35, 3 ft. No. 6 Wire, with supp. ₱ dou 4.30 10. 40, 3½ ft. No. 6 Wire, with supp. ₱ dou 4.30 10. 40, 5½ ft. No. 6 Wire, with toggle ■ ₱ dou 4.30 10. 50, 4 ft. No. 4 Wire, with supp. ₱ dou 4.50 10. 50, 4 ft. No. 4 Wire, with supp. ₱ dou 4.70 10. 55, 4 ft. No. 4 Wire, with supp. ₱ dou 5.00 10. 60, 4½ ft. No. 5 Wire, with supp. ₱ dou 5.00 10. 65, 4½ ft. No. 3 Wire, with supp. ₱ dou 5.00 10. 65, 4½ ft. No. 3 Wire, with supp. ₱ dou 5.80 10. 60 ft. 4½ ft. No. 3 Wire, with supp. ₱ dou 5.80 10. 60 ft. 4½ ft. No. 3 Wire, with supp. ₱ dou 5.80 10. 60 ft. 4½ ft. No. 3 Wire, with supp. ₱ dou 5.80 10. 60 ft. 4½ ft. No. 3 Wire, with supp. ₱ dou 5.80 10. 60 ft. 4½ ft. No. 3 Wire, with supp. ₱ dou 5.80 10. 60 ft. 4½ ft. No. 3 Wire, with supp. ₱ dou 5.80 10. 60 ft. 4½ ft. No. 5 Wire, with supp. ₱ dou 5.80	Sinks Snow Skate No. No. No. Pla Stock Tack Ame Steel Swed Swed Swed
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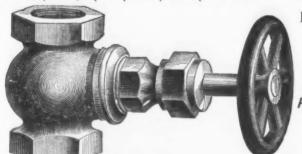
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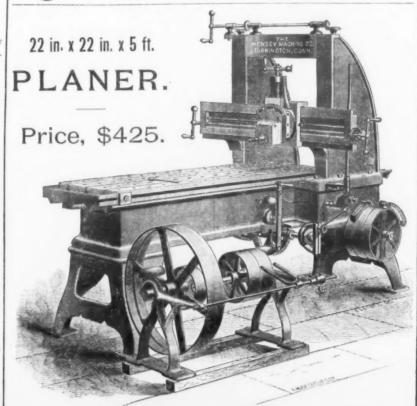
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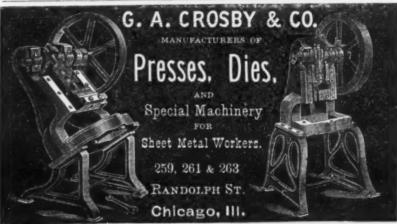
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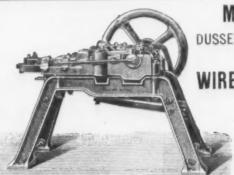
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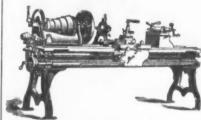
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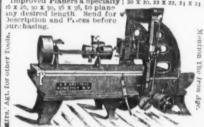
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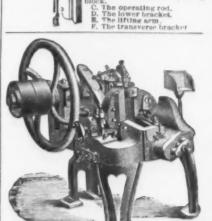
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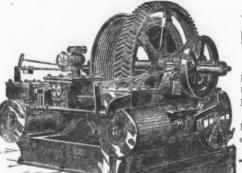


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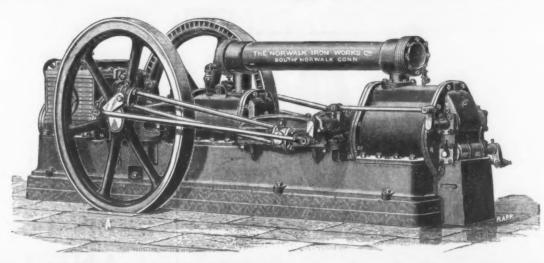
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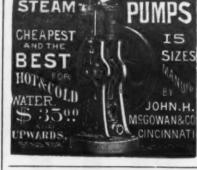




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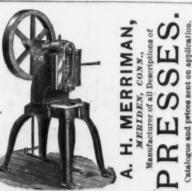


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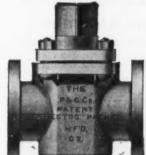
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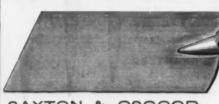


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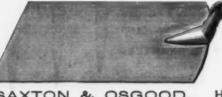
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